



Centre for Monetary Economics

## **NORGES BANK WATCH 2006**

### **An Independent Review of Monetary Policymaking in Norway**

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## **Executive summary**

Overall, monetary policy in Norway is quite successful. The interest rate setting in the past 2-3 years has contributed to a strong development of the Norwegian economy, without sacrificing price stability. Now, the issue is when and by how much monetary policy should be tightened, to avoid an excessive stimulation of the economy.

Since the adoption of an inflation target five years ago, Norges Bank has been determined to learn and improve, as well as to being open and transparent. The Bank's policy, analysis and communications have developed and improved over time. However, there are still some areas where we believe that things should be done differently, and these issues have received particular attention in our report. Our overall judgment is, however, that Norges Bank is doing a very good job.

### **The objectives of the monetary policy**

Norges Bank operates a flexible inflation target, where weight is given both to low and stable inflation, and to stable output and employment. This is consistent with the Regulation on Monetary Policy given by the Government. The low inflation in recent years, considerably below the operational target of 2.5 percent, is caused by factors not anticipated by the Bank, and should not be taken as an indication of a monetary policy that is inconsistent with the Government Regulation.

The Inflation report, which is the key policy document, states the Bank's interpretation of the objectives for the monetary policy, which does not fully capture the content of the Government Regulation on Monetary Policy. In particular, the part about exchange rate stability is excluded. While low inflation as the operational target in general would be given priority if there were conflicting aims with exchange rate stability, exchange rate stability is also an objective of the monetary policy. As a matter of principle, the statement of the objective for the monetary policy given in policy documents as the Inflation Report should be complete.

The Regulation on Monetary Policy should be interpreted in a forward-looking way, and past inflation discrepancies should not be compensated for in the future. Thus, the current policy strategy, which aims to take inflation gradually up towards the 2.5 percent target, does not violate the Regulation, even if it involves inflation considerably below the operational target for six consecutive years.

The Regulation on Monetary Policy makes clear that Norges Bank should aim at low and stable inflation, and a stable development of output and employment. The current low inflation is not in conflict with these aims. The operational target of 2.5 percent inflation cannot justify a policy which jeopardizes stability of the real economy, nor do we believe that Norges Bank would do this. If Norges Bank were to conclude that low inflation is so persistent that monetary policy can not push inflation towards 2.5 percent and at the same

time contribute to a stable development of the economy, the Bank should ask for a new Government Regulation. We believe that the Bank would do this in such a situation. But we are far from this situation now.

### **The challenges**

Recent literature on monetary policy does not provide unambiguous recommendations as to what extent monetary policy should be concerned about financial stability. Yet there is broad agreement that the evolution in asset markets and housing markets can serve as important indicators for future economic developments, and should therefore not be neglected in the decision making process. If fluctuations in asset and housing prices are amplified by the interest rate setting, this will have a strong effect on households' and firms' consumption and investment decisions, and may thus contribute to considerable volatility in the real economy. Such effects may be long-term in their nature, and may therefore not be taken properly care of within a three-year horizon.

Norwegian asset prices are currently increasing quite strongly. While there does not seem to be any cause for alarm as yet, in particular as regards a possible systemic crisis, we believe current price increases to be unsustainable, and likely to adjust further down the line. This adjustment, most likely to come about by a flattening of prices, rather than a downright decline, is likely to dampen domestic demand, possibly causing volatility in the real economy. Viewed in isolation this calls for a tighter monetary stance than is currently the case.

In contrast, the continued low inflation, considerably below the 2.5 percent target, calls for keeping interest rates low. What should Norges Bank do?

The current low inflation does not entail significant costs to the society. Rather, it involves a possibility of reducing unemployment below the level that would otherwise be possible. However, the current strong monetary stimulus to the economy involves a risk that the upturn of the economy becomes too strong. The strong state of the economy is another indication that the monetary stimulus should be weaker than Norges Bank is planning for.

The persistent inflation considerably below the 2.5 percent target has led observers to suggest that the target should be reduced, to avoid an expansionary monetary policy involving a risk of real instability. In our view, the existing Regulation gives sufficient flexibility. Changing the operational target for the monetary policy should not be taken lightly. A change to a different numerical target would give an inappropriate signal of how a flexible inflation targeting regime should work.

## **Norges Bank's Monetary policy assessments and strategy**

Publishing the Monetary policy assessments and strategy at the beginning of the strategy period has increased openness and transparency. The first chapter of the Inflation Reports seems its appropriate place. The content of the Monetary policy assessments and strategy should present and discuss the main concerns that lie behind the Boards decisions. In this respect, we miss a more thorough discussion of the labour market and wage formation, of the exchange rate, and of inflation expectations and various inflation measures. On the other hand, some elements, such as simple policy rules and monetary developments, do not seem to warrant an inclusion in the policy assessments.

The fan charts indicating the uncertainty associated with the Bank's forecasts are likely to underestimate the true uncertainty associated with the forecasts. Presentations of the fan chart should include a reservation that the assessment of the uncertainty is itself uncertain. If the Bank thinks that recent events indicate that inflation is more volatile than before, it should add a caveat about this when presenting the fan charts. The good track record of Professor Ragnar Nymoen's inflation forecasting model, in spite of a simple approach with little labour involved, warrants further attention from the Bank.

## **Monetary policy in 2002-2006**

Monetary policy operates with long time-lags. Thus, the effects of monetary policy decisions taken in 2002-04 are still being felt in 2005-06. Likewise, decisions taken in 2005 must be judged in light of how the economy performs in 2006 and 2007.

The outcome for the output gap and inflation in 2003 and 2004 suggests that monetary policy – viewed ex post - was too tight in the preceding 2-3 years. For 2005 the evidence is less clear. On the one hand, likely estimates for Norges Bank's "loss function" suggest that a more expansionary policy would have yielded better results, on the other we remain convinced that further rate cuts in 2004 would have increased the present risk of overheating the economy.

Throughout 2005, Norges Bank more or less held onto the strategy that was envisaged already by IR 3/04 in November 2004. In our view, this reflects in part that Norges Bank did a good job in its forecasts and policy analysis. However, the remarkable consistency in the strategy and interest rate setting over the last 16 months is also explained by the fact that the global economy has weathered the upturn in oil prices in recent years surprisingly well. Furthermore, the disturbances that have affected the Norwegian economy, have had opposite effects on the interest rate setting. While the recent surge in the oil price has contributed to the ongoing rise in domestic demand, continued changes in import patterns have contributed to keeping imported inflation low. The stability seen in Norges Bank's estimates over the last year for trading partners' growth is also found in the average forecasts for independent forecasters over the same period.

The Norwegian economy is currently into its third year of above-trend growth. Most sectors of the economy are expanding, some quite rapidly. Labour demand is picking up, and unemployment is very close to historic lows. While wage and price inflation thus far remain low, the present situation calls for somewhat tighter monetary policy than what Norges Bank currently indicates. High credit and asset price growth (see Chapter 3) strengthen this view. We believe that there is greater risk involved by hiking too little, too late, than by hiking too much, too early. In the latter case, it is relatively easy to reverse policy. In the former case, the longer one waits, the greater the likelihood that one has to tighten in greater steps, contrary to what the bank itself sees as a good way of setting interest rates.

## **Communication**

Norges Bank is a good communicator. The Bank has taken a number of steps to improve its communication with the market and the public at large over the years, and it continues to do so. This reflects – as we see it – a genuine commitment to transparency and openness. While this may be viewed in light of the Bank’s role as a public body, taking decisions that are important for households and enterprises, it is also believed to increase the efficiency of monetary policy.

Norges Bank’s communication with the market over the last year has been transparent, consistent and – overall – good. Market reactions to interest rate meetings have in general been slightly smaller than in previous years.

We applaud the decision of the Bank to publish its own interest rate forecast, with effect from IR 3/05 on. This has a number of benefits, such as giving the best possible illustration of the optimal interest rate path, enhancing monetary policy efficiency by being more transparent, facilitate a cross-check with market forward rates, and leading to unbiased forecasts for other variables. Norges Bank has also received international praise for this step. While there are some possible arguments against publishing an optimal interest rate path, these are in our opinion of minor importance

## 1. Introduction

Norway adopted an inflation target for the monetary policy five years ago, in March 2001. Although some countries had pursued inflation targeting for many years, this type of monetary regime was still in its infancy. The theoretical understanding and practical skills have improved over time, not least in Norges Bank. Norges Bank has been determined to learn and improve, as well as to being open and transparent. The Bank's policy, analyses and communications have developed and improved over time.

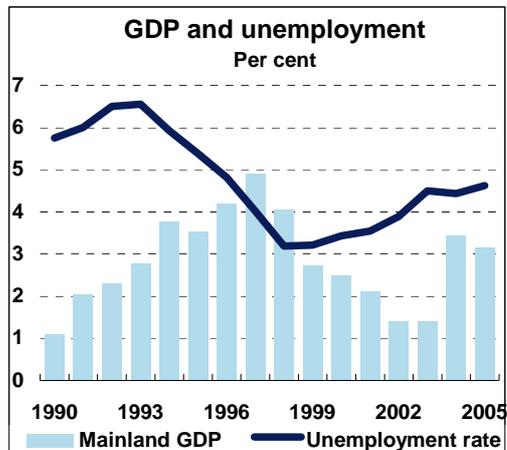
After five years with a new regime, a brief summing up might be in order. How does inflation targeting work, compared to what we expected? The question is not really well-defined, as the public debate prior to the change revealed that expectations varied widely. But forget that for the moment, and let us try to answer anyway.

Overall, the regime has worked well, although this has varied over time. Unsurprisingly, as the inflation target replaced a target of exchange rate stability, the exchange rate has become more volatile. More surprisingly, as we adopted a target of 2.5 percent inflation, inflation has not become more stable; in fact, inflation has varied more than before. Mainly, this is due to larger shocks than previously. However, with hindsight, the tight monetary policy in 2002 contributed to pushing inflation far below the target.

Another surprising issue is that we are now back in a situation where there is a conflict between the nominal target and the concern for stability of the real economy, as we experienced at times in the 1990s, under an exchange rate regime. While some proponents of an inflation targeting regime argued that it would essentially always contribute to real stability, we now see that there may be a conflict between the two aims.

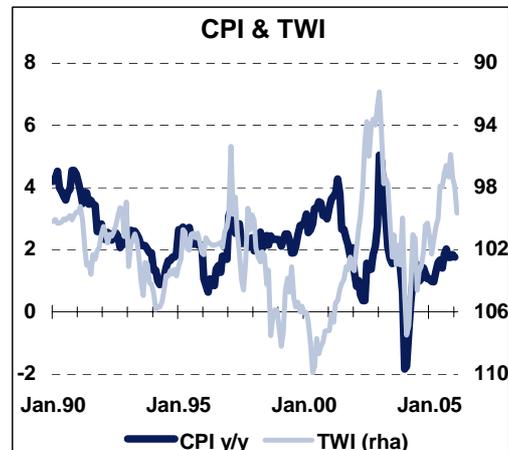
There are however also a number of positive elements. First, it is clear that the regime allows for considerable flexibility. It is possible to let monetary policy contribute to a stable development of output and employment, in addition to providing a nominal anchor for the economy. The relationship between the wage setting and the monetary policy now seems to work well, although after a difficult, and arguably costly, learning process. Furthermore, since late 2002, the monetary stimulus has contributed to an upturn in the economy, recently contributing to a reduction in unemployment, without a conflict with the nominal target. While there is now a risk that the upturn goes too far, we should not dismiss this overall positive development. Another clear advantage is that the current regime is much more robust to possible expectations of a change in regime, than an exchange rate target is.

Chart 1.1



Source: Statistics Norway/DnB NOR Markets

Chart 1.2



Source: Statistics Norway/Datastream

The Centre for Monetary Economics (CME) at BI Norwegian School of Management has organized Norges Bank Watch since 2000. Every year a group of experts is invited to write a report on the conduct of monetary policy in Norway. This is the seventh Norges Bank Watch report. Its mandate reads as follows:

*The objective of the Norges Bank Watch report of 2006 is to evaluate Norges Bank's conduct of monetary policy, given the mandate for the monetary policy set by the Government in March 2001. The committee should evaluate if the objectives stated in the monetary policy mandate concur with those expressed by Norges Bank and whether Norges Bank uses its policy instruments efficiently in order to achieve the relevant objectives.*

*The committee should also address other issues that it may find relevant for the present conduct of monetary policy.*

*Finally, the committee should evaluate the communication strategy of Norges Bank.*

*The report shall be presented at a press conference no later than 1 June 2006.*

Starting in 2004, Norges Bank Watch receives financial support from the Ministry of Finance. However, Norges Bank Watch 2006 is fully independent. The views and recommendations in this Report may not correspond to those of the Ministry of Finance.

In line with the mandate, we review Norges Bank's interpretation of the Government Regulation on monetary policy in Chapter 2. Chapter 3 discusses the current challenges facing monetary policy, in particular the balance between financial and real stability on the one hand, and the inflation target on the other. Norges Bank's Monetary policy

assessments and strategy, now the first chapter of the Inflation Report, is evaluated in chapter 4. In chapter 5, we assess the monetary policy decisions of the Bank in 2002-2006, with a focus on 2005. Finally, in chapter 6, we discuss Norges Bank's communication, in particular with financial markets. A summary in Norwegian is provided at the very end of this Report.

In the work with this report we have met with people working in financial markets and in Statistics Norway, as well as bureaucrats in the Ministry of Finance and in Norges Bank. We have also benefited from a discussion of monetary policy with the Governor and Deputy Governor in Norges Bank. We take this opportunity to thank them all for being willing to share with us their time and insights as to the conduct of monetary policy in Norway. We are also grateful to Henrik Jensen for valuable comments and discussions in the early part of our work.

The views of the authors on specific issues are summarized throughout the Report. Also, an opening statement is offered at the start of each chapter (except for this one) highlighting important issues and conclusions.

## **2. The objectives of the monetary policy**

**Norges Bank operates a flexible inflation target, where weight is given both to low and stable inflation, and to stable output and employment. This is consistent with the Regulation on Monetary Policy given by the Government. The low inflation in recent years, considerably below the operational target of 2.5 percent, is caused by factors not anticipated by the Bank, and should not be taken as an indication of a monetary policy that is inconsistent with the Government Regulation.**

**The Inflation Report, which is the key policy document, states the Bank's interpretation of the objectives for the monetary policy, which does not fully capture the content of the Government Regulation on Monetary Policy. In particular, the part about exchange rate stability is excluded. While low inflation as the operational target in general would be given priority if there were conflicting aims with exchange rate stability, exchange rate stability is also an objective of the monetary policy. As a matter of principle, the statement of the objective for the monetary policy given in policy documents as the Inflation Report should be complete.**

**The Regulation on Monetary Policy should be interpreted in a forward-looking way, and past inflation discrepancies should not be compensated for in the future. Thus, the current policy strategy, which aims to take inflation gradually up towards the 2.5 percent target, does not violate the Regulation, even if it involves inflation considerably below the operational target for six consecutive years.**

**The Regulation on Monetary Policy makes clear that Norges Bank should aim at low and stable inflation, and a stable development of output and employment. The current low inflation is not in conflict with these aims. The operational target of 2.5 percent inflation cannot justify a policy which jeopardizes stability of the real economy, nor do we believe that Norges Bank would do this. If Norges Bank were to conclude that low inflation is so persistent that monetary policy can not push inflation towards 2.5 percent and at the same time contribute to a stable development of the economy, the Bank should ask for a new Government Regulation. We believe that the Bank would do this in such a situation. But we are far from this situation now.**

### **2.1 Norges Bank's interpretation of the policy mandate**

The Regulation on Monetary Policy, as given by the Government on 29 March 2001, states that

*Monetary policy shall be aimed at stability in the Norwegian krone's national and international value, contributing to stable expectations concerning exchange rate developments. At the same time, monetary policy shall underpin fiscal policy by contributing to stable developments in output and employment.*

*Norges Bank is responsible for the implementation of monetary policy.*

*Norges Bank's implementation of monetary policy shall, in accordance with the first paragraph, be oriented towards low and stable inflation. The operational target of monetary policy shall be annual consumer price inflation of approximately 2.5 per cent over time. In general, the direct effects on consumer prices resulting from changes in interest rates, taxes, excise duties and extraordinary temporary disturbances shall not be taken into account.*

In the Report to the Storting in which the Regulation on Monetary Policy was given (St.meld. 29, 2000-2001), it was made clear that the motivation for the new regulation was to ensure that monetary policy should contribute to a stable development of the economy. While the change from an exchange rate target to an inflation target implied that the operational target would be inflation, it was not motivated by a view that price stability should be given priority relative to exchange rate stability. Rather, it was argued that in a small open economy there would be a close connection between exchange rate stability and low and stable inflation.

Norges Bank's interpretation of its mandate in the introduction to the Inflation Report, reads as follows,

#### *Objective*

*The operational target of monetary policy is low and stable inflation, with annual consumer price inflation of approximately 2.5% over time.*

*In general, direct effects on consumer prices resulting from changes in interest rates, taxes, excise duties and extraordinary temporary disturbances are not taken into account.*

#### *Implementation*

*Norges Bank operates a flexible inflation targeting regime, so that weight is given to both variability in inflation and variability in output and employment.*

*Monetary policy influences the economy with long and variable lags. Norges Bank sets the interest rate with a view to stabilising inflation at the target within a reasonable time horizon, normally 1–3 years. The relevant horizon will depend on disturbances to which the economy is exposed and how they will affect the path for inflation and the real economy in the period ahead.*

It is pertinent to discuss to what extent Norges Bank's own interpretation corresponds to the Government Regulation, in particular as Norges Bank does not publish the Regulation in the Inflation Report, which is the key policy document. While the Regulation is stated in the Bank's Annual Report, and is also available on the Bank's web pages, these are clearly less visible to the market and general public than the Inflation Report.

Norges Bank is explicit that it operates a flexible inflation target, so that weight is given to both low inflation and to stable output and employment. This is clearly consistent with the Government Regulation. The notable differences are that Norges Bank's interpretation does not mention exchange rate stability, and that it specifies a 1-3 year horizon as the time horizon under "normal" circumstances.

One argument for not mentioning the objective of exchange rate stability is that it to a large extent is ensured by the inflation target, and, if not, the inflation target should be given priority. For example, we cannot expect the nominal exchange rate between currencies with different inflation targets to remain stable over longer periods. In this case it is clear that the inflation target should be given priority, as the implementation of the monetary policy should be oriented towards inflation, in a forward looking manner. This is not to say, however, that the Bank should disregard exchange rate stability as an independent objective. In our view, the fact that exchange rate stability is specified as an objective in the Regulation, should be taken to imply that if there are large fluctuations in the exchange rate, this should be an independent factor in the interest rate setting, beyond the effect of the exchange rate on the rate of inflation.

In NBW-05, it was argued that a clause about exchange rate stability in the Government Regulation, and Norges Bank reminding the market about it, may affect market participants' expectations, thus contributing to exchange rate stability. Furthermore, it was argued that, as a matter of principle, the statement of the objective for the monetary policy given in policy documents as the Inflation Report should be complete, not excluding the part about exchange rate stability. We maintain this view.

We find it appropriate for Norges Bank to mention a specific time horizon that will apply under normal circumstances. However, we would emphasize that the qualification "normal" should not be just an empty word. If the circumstances are such that a 1-3 year horizon for stabilizing inflation at 2.5 percent inflation may put stability of the real economy at risk, then it would be against the motivation of the Government Regulation to give priority to the 1-3 year time horizon.

Since early 2003, inflation has been considerably below the 2.5 percent target. CPI-ATE grew by 1.1 percent from 2002 to 2003, then by 0.3 percent to 2004, and by 1.0 percent to 2005. Again, it is pertinent to ask whether this is consistent with the Regulation on Monetary Policy, which specifies the operational target to 2.5 percent.

In our view, the discrepancy between actual and target inflation is not inconsistent with the Government Regulation. Throughout the period, the Bank has set the interest with the aim of realizing the inflation target within a reasonable time horizon. However, due to reasons not anticipated by the Bank, the rate of inflation has turned out to be considerably lower than expected. If the Bank had reduced the interest rate more sharply, it would most likely have led to higher inflation, thus reducing the discrepancy between actual and target inflation. Yet according to the arguments of the Bank, that would have led to a less stable development of the real economy. The Bank is given the task of weighting these two concerns against each other. While we, and previous Norges Bank Watch reports,

have argued that the Bank at times might have set a different interest rate, the Bank's actual interest rate setting has clearly been within the range that is consistent with the Government Regulation.

Note also that while Norges Bank has chosen to exclude energy prices in the measure it targets (CPI-ATE), on the motivation that these are likely to reflect temporary changes, the Government Regulation does not mention energy prices. Part of the recent increase in energy prices may reflect more persistent changes, including higher demand for oil due to higher growth in China and other countries. Thus, even if Norges Bank has chosen CPI-ATE as the measure that it targets, the evaluation of whether monetary policy is consistent with the Government Regulation should also take into account that there are good reasons not to exclude energy prices. That would have made the discrepancy relative to the operational target given in the Government Regulation smaller. However, this point would not be relevant for the discrepancy between the policy target announced by Norges Bank (which is based on CPI-ATE) and actual rate of inflation.

#### **NBW's view**

**Norges Bank operates a flexible inflation target, where weight is given both to low and stable inflation, and to stable output and employment. This is consistent with the Regulation on Monetary Policy given by the Government. The low inflation in the recent years, considerably below the operational target of 2.5 percent, is caused by factors not anticipated by the Bank, and should not be taken as an indication of a monetary policy that is inconsistent with the Government Regulation.**

**The Inflation Report, which is the key policy document, states the Bank's interpretation of the objectives for the monetary policy, which does not fully capture the content of the Government Regulation on Monetary Policy. In particular, the part about exchange rate stability is excluded. While low inflation as the operational target in general would be given priority if there were conflicting aims with exchange rate stability, exchange rate stability is also an objective of the monetary policy. As a matter of principle, the statement of the objective for the monetary policy given in policy documents as the Inflation Report should be complete, not excluding the part about exchange rate stability.**

## **2.2 For how long can the rate of inflation remain below 2.5 percent?**

The discrepancy of actual and target inflation is however also likely to persist in the future. By Norges Bank's own forecast, CPI-ATE will remain below the 2.5 percent target until the end of 2008. If this forecast is realised, inflation will have been considerably below the target value for six years. We argue below that the Bank should raise interest rates faster than they have indicated so far, which might lead inflation to remain low even longer. But for how long can the inflation rate remain below 2.5 percent without violating the Government Regulation?

In the Report to the Storting in which the Regulation on Monetary Policy was given (St.meld. 29, 2000-2001), it was made clear that the target should be forward-looking: The Ministry stated that *“The conduct of monetary policy shall be forward-looking and temporary disturbances that are not considered to have an effect on underlying price and cost inflation should not be taken into account...The provision is to be construed to mean that deviations between actual inflation and the target in a period shall not be compensated for in a later period. If inflation deviates significantly from the target over a period, Norges Bank shall set the interest rate with a view to returning gradually consumer price inflation to the target to avoid unnecessary fluctuations in output and employment.”* ([http://odin.dep.no/filarkiv/260472/pmk\\_rap.pdf](http://odin.dep.no/filarkiv/260472/pmk_rap.pdf)).

In our view, the Bank's current policy, as described in its Monetary policy assessment and strategy, corresponds very well with the Ministry's directions. Thus, there can be little doubt that the Bank's current strategy is consistent with the Government Regulation.

A more difficult question is whether the Government Regulation would allow even more patience in getting inflation up. To answer this, we must go more thoroughly into the different parts of the Regulation. The Regulation makes clear that monetary policy should aim at stability in the Norwegian krone's national and international value, and it should contribute to stable development in output and employment. In accordance with these aims, the implementation should be oriented towards low and stable inflation. The operational target should be annual inflation of approximately 2.5 percent over time, and extraordinary temporary disturbances should not be taken into account.

The Regulation gives little indication of which of the different aims or parts that should be given priority if conflicting aims should occur. Some possible inconsistencies are discussed in the Report to the Storting (St.meld 29, 2000-2001). As noted above, it is clear that if the inflation rate deviates from target, stability in employment and output should be important when deciding how fast inflation should return to the target.

In the current situation, the potential inconsistency is between the operational target of 2.5 percent inflation, and a stable development in output and employment. The choice of an operational target of 2.5 percent was not motivated in the Report to the Storting (St.meld 29, 2000-2001) in which the Regulation was given. In subsequent policy documents (National Budget 2002) it was observed that 2.5 percent inflation was close to the average inflation in Norway in the 1990s. It was also observed that Great Britain and Australia had the same numerical target, the ECB had a target of inflation below 2 percent, while in the US, there was no numerical target, and in the 1990s, average inflation had been around 3 percent. From these observations, we conclude that the 2.5 percent target was not chosen because of any specific merit value was attached to this number. Rather, it reflected a view that an average annual inflation of about 2.5 percent would be consistent with a stable and satisfying development of the Norwegian economy.

In the last few years, however, cheaper imports and high productivity growth have led to a rate of inflation considerably below 2.5 percent, even in a cyclical upturn of the Norwegian economy. Norges Bank has attributed this to temporary disturbances, and by

extending the time horizon for reaching the 2.5 percent target from two to three years, it gave itself scope to take the stability of the real economy into consideration. However, for how long can a disturbance be viewed as extraordinary and temporary?

There is no absolute upper number of years for how long a disturbance can last and still be viewed as temporary. In our view, the interpretation of the word temporary must be seen in connection with the other parts of the Regulation, in particular the main objectives of stability in the krone value, and contributing to stable developments of output and employment. As long as inflation below 2.5 percent can be attributed to temporary disturbances, there is no inconsistency in monetary policy giving priority to the main objectives. In fact, this argument could be taken even further: As long as inflation below 2.5 percent can be viewed as reflecting temporary disturbances, a monetary policy which gave priority to the 2.5 percent target, at the risk of instability in the real economy, would be in conflict with the Government Regulation.

Note also that as long as inflation misses the operational target on the lower side, there is no inconsistency relative to the objective in the Government Regulation of stability in the krone's value. In contrast, if inflation had been 1-2 percent higher than the 2.5 percent target, i.e. at about 4 percent, and remained so for several years, one could have argued that this would be conflicting with the objective of stability in the krone's value. Thus, while the Norwegian monetary policy is usually thought to be symmetric around the 2.5 percent target, and is stated as symmetric by Norges Bank (Gjedrem, 2001), one could argue that the Government Regulation gives less scope for persistent deviations of inflation above 2.5 than for persistent deviations below.

In spite of this, we will not argue that one can accept a situation where inflation is below the target rate indefinitely. More specifically, if Norges Bank were to conclude that the factors contributing to low inflation were so persistent that monetary policy could not push inflation towards 2.5 percent and at the same time contribute to a stable development of the economy, the problem would be more acute. Likewise, if inflation had been below the 2.5 percent target for sufficiently many years that this was considered an important problem in the Norwegian society, something would have to be done. However, the answer should not be to pursue a more expansionary monetary policy that involved a clear risk of instability in the real economy. We do not believe that the Bank would do this, and in our view it would be inconsistent with the aim of the monetary policy as given in the Government Regulation. Thus, in this situation a new Government Regulation would be necessary. Norges Bank would, in our view, have an obligation to ask for a new regulation, rather than pursuing a monetary policy that involved a clear risk of instability in the real economy, cf. section 3 in the Norges Bank Act. The Governor confirmed to us that he is also of this opinion.

Note, however, that in our view we are far from a situation where the Regulation should be changed, see section 3.4 below. Thus far, we can not conclude that Norges Bank's aim to push inflation up towards 2.5% has violated the Regulation's aim for real economy stability (although as we argue elsewhere, stability of the real economy may indicate that the stimulus should be smaller than now). Furthermore, it is our impression that the

deviation from the 2.5 percent target is not considered an important problem in the Norwegian economy, disregarding a small number of people in the financial markets.

**NBW's view**

**The Regulation on Monetary Policy should be interpreted in a forward-looking way, and past inflation discrepancies should not be compensated for in the future. Thus, the current policy strategy, which aims to take inflation gradually up towards the 2.5 percent target, does not violate the Regulation, even if it involves inflation considerably below the operational target for six consecutive years.**

**The Regulation on Monetary Policy makes clear that Norges Bank should aim at low and stable inflation, and a stable development of output and employment. The current low inflation is not in conflict with these aims. The operational target of 2.5 percent inflation cannot justify a policy which jeopardizes stability of the real economy, nor do we believe that Norges Bank would do this. If Norges Bank were to conclude that low inflation is so persistent that monetary policy can not push inflation towards 2.5 percent and at the same time contribute to a stable development of the economy, the Bank should ask for a new Government Regulation. We believe that the Bank would do this in such a situation. But we are far from this situation now.**

### **3 The challenges**

**Recent literature on monetary policy does not provide unambiguous recommendations as to what extent monetary policy should be concerned about financial stability. Yet there is broad agreement that the evolution in asset markets and housing markets can serve as important indicators for future economic developments, and should therefore not be neglected in the decision making process. If fluctuations in asset and housing prices are amplified by the interest rate setting, it will have strong effect on households' and firms' consumption and investment decisions, and may thus contribute to volatility in the real economy.**

**Norwegian asset prices are currently increasing quite strongly. While there does not seem to be any cause for alarm as yet, in particular as regards a possible systemic crisis, we believe current price increases to be unsustainable, and likely to adjust further down the line. This adjustment, most likely to come about by a flattening of prices, rather than a downright decline, are likely to dampen domestic demand, possibly causing volatility in the real economy. Viewed in isolation this calls for a tighter monetary stance than is currently the case.**

**In contrast, the continued low inflation, considerably below the 2.5 percent target, calls for keeping interest rates low. What should Norges Bank do?**

**The current low inflation does not entail significant costs to the society. Rather, it involves a possibility of reducing unemployment below the level that would otherwise be possible. However, the current strong monetary stimulus to the economy involves a risk that the upturn of the economy becomes too strong. The strong state of the economy is another indication that the monetary stimulus should be weaker than Norges Bank is planning for.**

**The persistent inflation considerably below the 2.5 percent target has led observers to suggest that the target should be reduced, to avoid an expansionary monetary policy involving a risk of real instability. In our view, the existing Regulation gives sufficient flexibility. Changing the operational target for the monetary policy should not be taken lightly. A change to a different numerical target would give an inappropriate signal of how a flexible inflation targeting regime should work.**

#### **3.1 Financial stability**

An important open issue in monetary policy, both in the academic literature and in real-world interest rate setting, is to what extent central banks should take financial stability explicitly into consideration, by responding to asset prices and/or housing prices. It is tempting for the casual observer to argue that surging asset prices or housing prices should be met by a contractionary policy stance. Usually, the argument is that such asset price increases are the results of irrational market behaviour.

The recent theoretical literature on this issue, however, does not provide such unambiguous recommendations. A number of contributions have argued against the central bank responding to such movements. Some papers examine the performance of simple policy rules (like Taylor rules), which are amended by including a response to either an asset price index or a measure of housing prices. Through numerical simulations, it is then found that adding such a response in the Taylor rule does not do much in terms of economic performance (measured as output gap and inflation variability). In other words, if there is a booming asset market, it is likely to be associated with an expanding economy and higher inflationary pressure, so the demand-pull nature of the asset market change will be sufficiently dampened by a contractionary response to increasing output and inflation. There is no need to have a separate reaction to asset prices (see e.g. Bernanke and Gertler, 2001)

Other researchers have put forward a different view. Borio and Lowe (2002) argue that a central bank that is successful in keeping inflation down runs the risk that the credibility of the inflation target conceals the build up of imbalances in the real economy, increasing the risk of financial instability. Dupor (2003) shows that if an asset market burst is a result of systematically wrong (positive) perceptions by investors on future profitability, the associated investment inefficiencies can be an argument for reacting contractionary to the asset market evolution. In practice, however, the latter finding is difficult to handle. When is the observed increase in asset market prices “sufficiently inefficient” in order to warrant a monetary policy reaction? Only in a few instances (like the US stock market crash in 1987), it was fairly clear to most observers that the drop warranted a policy response. Undoubtedly, the easing of US monetary policy contributed to dampen the real consequences of the crash.

However, the evolution in asset markets and housing markets can serve as important indicators of future economic developments, and should therefore not be neglected in the decision making process. Thanks to the wealth effect, a booming housing market is likely to lead to increases in future consumer spending, and under flexible inflation targeting, this should be met with a contraction in policy.

It is also clear that over time, households and firms will adjust to a low interest rate, by increasing their consumption and investment, thus building up real assets and reducing financial assets. Growing asset and housing prices will stimulate the build-up of real assets, and also increase consumption. If, at a later stage, the interest rate increases considerably, households and firms will re-adjust, and consumption and investment will fall. Falling asset and housing prices may magnify the reduction in consumption and investment, contributing to a downturn of the economy. Such cycles can run over many years, and a 2-3 year horizon for monetary policy may not be sufficient to stabilise the economy. Furthermore, fluctuations in asset prices, housing prices and interest rates may also cause households and firms to make decisions on the basis of expectations that turn out to be incorrect, which may involve large costs to those who are affected.

There are abundant empirical evidence, both from Norway and other countries, indicating that periods of above-trend increases in asset prices, eventually lead to periods of flattening or declining asset prices, affecting demand and production along the way. In Norway these forces were last at play in the mid-1980s, affecting housing prices, demand and production for at least 6-7 years after housing prices peaked in early 1988. Other valid examples are the unification boom in Germany in the early 1990s and the Japanese credit-driven boom in the late 1980s, with the effects of both arguably still being felt in the property markets and therefore also in demand and production.

These developments pose two types of risks.

First, there is the systemic risk, emanating from potential defaults in the private sector and potential losses in the financial sector. Not only may these developments lead to undesired transfers of income and wealth, but they may also hamper the financial sector's central role as mediator of credit in the economy. As Norges Bank itself states on its home page: *"Financial stability implies that the financial system is robust to disturbances in the economy and can channel capital, execute payments and redistribute risk in a satisfactory manner. Experience shows that the foundation for financial instability is laid during periods of strong growth in debt and asset prices."* ([http://www.norges-bank.no/english/financial\\_stability/](http://www.norges-bank.no/english/financial_stability/))

Second, there is the adjacent risk to stability in the real economy. Periods of increasing asset prices are inextricably linked to periods of expanding credit. Quite often the causality runs the opposite way, as financial innovations and/or deregulations facilitate the access to credit. Higher assets prices and increased borrowing is positively correlated with demand as an expansion of credit can increase the consumption possibilities for liquidity-constrained households and enterprises. Yet pure asset price inflation cannot increase the economy's productive potential nor its long-term consumption possibilities. Hence, any near-term increase in consumption due to higher asset prices, must imply a softer consumption path at a later stage.

A third, related, risk is that too low risk premiums may lead to an inefficient allocation of capital, over-investing in assets that will yield low future returns.

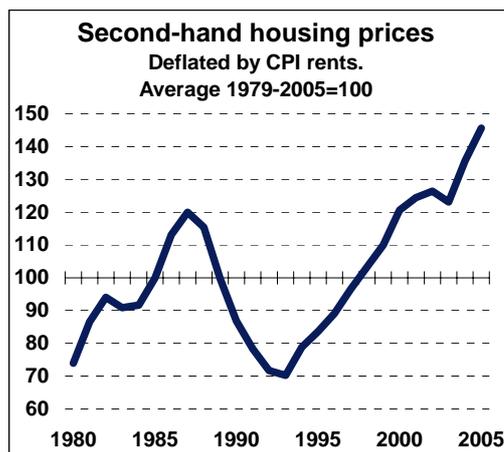
The current situation in Norway has much in common with the situation elsewhere in the industrialized world. When the stock market bubble burst in 2000, central banks countered the subsequent global cooling by supplying abundant liquidity, pushing short-term rates down to record-low levels (interest rate troughs in Germany, USA and Norway were, respectively, the lowest since 1872, 1958 and 1816). This led to the global "search for yield", i.e. the hunt for assets promising to deliver higher returns than the meagre decimals to be obtained on safe, short-term investments. Long-term rates and risk premiums for all kinds of assets were pulled down to historically low levels. Interestingly, while the stock market also turned the corner, easily explained by rising profits in the ongoing cyclical upturn, pricing relative to earnings has remained relatively conservative. This may be explained by the old proverb of "the burned child that avoids

the fire", as stocks may have become less popular this close to the largest post-war decline.

On the other hand, money has flowed into the housing markets in most industrialized nations. In its latest half-yearly Economic Outlook, the OECD (OECD, 2005) secretariat notes that the current housing price booms in a number of industrialized countries has some noteworthy characteristics. First, it is unusually synchronised, with many nations experiencing booms at the same time, Second, it has lasted unusually long and price increases have, in general, been unusually large. Third, it has – at least for parts of the period – been counter-cyclical, while the normal pattern would be for housing prices to decline in the recession that ran from 2000 to 2003. The OECD is cautious in its assessment, but singles out five markets, that it judges to have overvaluated housing prices. Norway is one of these.

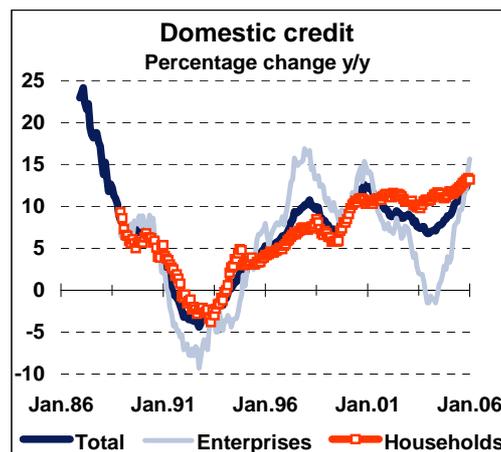
According to the OECD, Norwegian housing prices were in 2004 about 18% higher than what could be explained by fundamental factors, such as interest rates, taxes, depreciation and expected returns. A brief look into Norwegian data show that housing prices, having risen by about 10% per year on average since 1993, is at their highest level relative to rents at least in the last 25 years. Relative to disposable income they are way above the average for the last 25 years. Estimates based upon Norges Bank's own housing price model indicate that housing prices in 2005Q3 were 7-10% higher than the model could explain (Financial Stability Report 2/05). However, this could be attributed to variables not included in the model, namely high dividends (a temporary factor) and expectations of a permanently low interest rate level. Since 2005Q3 housing prices have risen another 5%. The fact that the banks have increased their lending relative to the market value of the collateral may also indicate that affordability is at low levels.

Chart 3.1



Source: Statistics Norway/DnB NOR Markets

Chart 3.2



Source: Norges Bank

A relatively hot housing market has led to increased construction activity, with housing starts last year at their highest level since 1982. Also, prices for secondary homes and

construction starts for housing, are surging. In the commercial property market, expected yields are pulled down to historically low levels.

Thus far, we consider the systemic risk to be of minor importance. Bank's balances are solid and losses are low. Overall, the financial situation in households and enterprises is satisfactory, as is thoroughly discussed in Norges Bank's Financial Stability report 2/05.

However, the risk of unnecessary large fluctuations in the real economy due to future fluctuations in asset prices and credit is increasing by the day. There is no denying that borrowers have an individual responsibility for assessing the risk related to higher interest rates and/or adverse economic conditions. Likewise, lenders have a responsibility to assess the risk in their portfolios, to price risk accordingly, and to put aside reserves to meet a worsening of their balances. But common microeconomic behaviour on behalf of each of these groups – buying before prices increase further and maintain market shares in a growing economy, may lead to unwanted results on a macroeconomic level. The households that in the future see the value of their homes flatten out will not go bust, but they will borrow less. And the bank that sees the market contracting will not necessarily lose money, but it will see its profits and activity falling.

These views are not ours alone. On presenting its annual report, Kredittilsynet (2006) (The Financial Supervisory Authority of Norway) stated that (our translation): *“Good economic conditions contributed to 2005 being a very good year for Norwegian banks... These good results imply that there does not appear to be any significant problems for the financial institutions over the near-term horizon... However, the picture is more worrying over the medium term. We are worried about the increasing risk due to increasing debt and housing prices. This means that the banks already in 2006 should tighten its standards regarding housing loans, It would also be advantageous if Norges Bank's gradual interest rate normalization does not take too long time.”* Kredittilsynets head, Bjørn Skogstad Aamo, added that the words “not too” should be omitted from the “in small, not too frequent steps”.

Interestingly, other central banks seem to attach more weight to developments in asset prices than Norges Bank does. In its Monthly Bulletin for February, the European Central Bank, refers to mortgage borrowing (currently close to 12% y/y), stating that it *“is particularly buoyant, implying a need to monitor developments in the housing market closely. Overall, strong monetary and credit growth in a context of already ample liquidity in the euro area points to risks to price stability over the medium to longer term.”*

Mervyn King, Governor of the inflation targeting Bank of England formulated the risk related to asset pricing this way in a speech January 16<sup>th</sup> this year (King, 2006): *“...risk premia have become unusually compressed and the expansion of money and credit may have encouraged investors to take on more risk than hitherto without demanding a higher return. It is questionable whether such behaviour can persist. At some point the ratio of asset prices to the prices of goods and services will revert to more normal levels. That could come about in one of two ways: either the prices of goods and services rise to*

*“catch up” with asset prices as the increased money leads to higher inflation, or asset prices fall back as markets reassess the appropriate levels of risk premia. In neither case would it be easy to keep inflation close to the 2% target.”*

As we see it, this issue is primarily not a question of whether the bank should “target” asset prices or not. Rather it is, equivalent to the arguments we put forward in Chapter 5, a question of which side one should err on. Currently, developments in asset prices call for higher interest rates.

#### **NBW’s view**

**Recent literature on monetary policy does not provide unambiguous recommendations as to what extent monetary policy should be concerned about financial stability. Yet there is broad agreement that the evolution in asset markets and housing markets can serve as important indicators for future economic developments, and should therefore not be neglected in the decision making process. If fluctuations in asset and housing prices are amplified by the interest rate setting, it will have strong effect on households’ and firms’ consumption and investment decisions, and may thus contribute to volatility in the real economy. Such effects may be long-term in their nature, and may therefore not be taken properly care of within a three-year horizon.**

**Norwegian asset prices are currently increasing quite strongly. While there does not seem to be any cause for alarm as yet, in particular as regards a possible systemic crisis, we believe current price increases to be unsustainable, and likely to adjust further down the line. This adjustment, most likely to come about by a flattening of prices, rather than a downright decline, are likely to dampen domestic demand, possibly causing volatility in the real economy. Viewed in isolation this calls for a tighter monetary stance than is currently the case.**

### **3.2 Monetary policy and inflation**

Inflation, adjusted for indirect taxes and energy, is currently at very low levels. Cheaper imports, in particular due to increased imports from low cost countries in Eastern Europe and Asia, and high productivity growth, are key factors. In addition, the low inflation has contributed to moderate nominal wage growth, which by itself is an important element in maintaining inflation low. By Norwegian standards the current situation with brisk economic growth and tighter labour market, yet very low inflation, is quite unusual. But can the low inflation persist, even if Norges Bank is determined to push inflation up towards the 2.5 percent target? We will not make an inflation forecast, and will not argue that inflation will continue to be low. However, we will argue that the possibility is there, and that the likelihood is not negligible.

According to standard economic theory, a central bank can, given some time, determine the rate of inflation. By increasing money growth, and by setting a low nominal interest rate, inflation is pushed up via three channels. The low interest rate stimulates domestic

demand via higher consumption and higher investment, leading to higher output and lower unemployment, thus causing higher wage and price growth. Second, the low interest rate will reduce demand for the country's currency, causing a depreciation that leads to higher import prices, in addition to improved competitiveness and increased activity in the exposed industries. Third, the low interest rate, and the explicit intention by the central bank of raising inflation, will raise economic agents' expectations of future inflation, thus leading them to raise wages and prices more than they would have done otherwise.

However, there are several reasons why these effects in some situations can be weak and slow. As argued in box 3.1, the stimulating effect on the economy of lower interest rates may have little impact on inflation in the short run, as the so called Phillips curve (the negative relationship between unemployment and inflation) is likely to be relatively flat at low levels of inflation.

Second, the effect on the exchange rate may also fail to materialise. One reason is that the exchange rate is influenced by the domestic interest rate relative to the interest rate on other currencies (i.e. the interest rate differential), and not by the domestic interest rate *per se*. Thus, if other countries set low interest rates, as our main trading partners have done in recent years, it is more difficult for Norges Bank to induce a weaker krone by setting a low interest rate. A further reason is that financial markets are forward-looking so that even if the Norwegian interest rate is low now, financial markets may expect a higher interest rate in the future. The higher expected future interest rate will by itself contribute to keeping the krone strong. Finally, the strong state of the Norwegian economy, with a very high current account surplus by international standards, may also reduce the likelihood that the krone depreciates.

Third, if the direct effects on inflation from low interest rates are weak, and economic agents realise this, the expectations effect leading economic agents to raise wages and prices more than they would have done otherwise, will also be weak or absent. The survey of inflation expectations, undertaken by TNS Gallup on commission from Norges Bank, gives mixed evidence on this (<http://www.tns-gallup.no/arch/img/211146.pdf>). On one hand, most groups now expect higher inflation than before. Expected inflation two years from now, is 2.2 percent for economists, 2.6 for representatives from labour market organisations, 2.8 for business leaders, and 4.0 for households. On the other hand, expected nominal wage growth, an important decisive factor behind inflation, is still rather low. Economists expect 3.9 percent wage growth in 2006, while representatives from labour market organisations expect 3.6 percent wage growth, and business leaders expect only 3.1 percent wage growth in their own firm. Households expect an increase in their salary or pension of 3.8 percent by the next year. If wage growth remains below 4 percent, it will contribute to keeping inflation below 2.5 percent.

### **Box 3.1 A flat Phillips curve at low levels of inflation**

There are several reasons why one would expect the Phillips curve to be relatively flat at low levels of inflation, i.e. that an increase in output is associated with a small increase in inflation, thus lending support to the idea that at low inflation levels, as in Norway, a boom will not be as inflationary as in high inflation times. Some of these reasons are based on quite different economic frameworks, which may suggest that the relationship is likely to be rather robust.

Lucas (1972, 1973) consider models with flexible prices, where agents in the short run do not know whether a high price reflects a real shock, to which they should respond by changing output, or a nominal shock, to which they should not respond. Under highly variable inflation, shocks are more likely to be nominal, and thus agents should not respond. Hence, the economy is characterized by a steep Phillips curve. In contrast, if inflation is stable, a shock is likely to be real, and agents should change output, i.e. the Phillips curve is flat. As there is a close positive link between inflation variability and average inflation, low average inflation is associated with a flat Phillips curve.

Ball, Mankiw and Romer (1988) analyse a very different setting, where firms pay a small cost of changing their prices (so called menu costs). If average inflation is high, all firms must update prices frequently to keep up with the rising aggregate price level. At low levels of inflation, prices might be updated less frequently, however. Hence, prices are stickier at low levels of inflation. This implies that demand changes are less likely to lead to price changes. Consequently, the Phillips curve is flat at low levels of inflation, but steep at high levels of inflation.

Dotsey, M., R. King and A. Wolman (1999) explore a model related to that of Ball et al. (1988), but closer to the standard models of time-dependent price setting. The size of the menu costs is randomly distributed across firms, and the probability that a given firm will change its price is derived endogenously. This contrasts the usual Calvo scheme where the frequency of price changes is exogenous and state *independent*. The authors then show that the probability *increases* with average inflation, implying that prices are updated frequently under high inflation. This corresponds to quite flexible prices and thus a steep Phillips curve. At low rates of inflation, prices are updated less frequently, corresponding to rather sticky prices, and thus a flat Phillips curve.

Elsby (2004) considers a model where firms set wages, but where nominal wage cuts are costly because of adverse effects on workers' morale and productivity. Elsby shows that under low inflation, firms will be cautious when giving wage increases, because of a concern that a wage increase today will be costly to reverse in future periods, implying that wages may be too high in the future. In contrast, under high inflation, price growth will erode the real value of workers' wages, and nominal wage cuts are less likely to be required, even if one gives higher wage increases today. Thus, wage increases will be more compressed under low inflation than under high, suggesting that the Phillips curve will be flatter under low inflation.

A flat Phillips curve at low levels of inflation is consistent with Norwegian evidence that the Phillips curve is convex in the inflation – unemployment space, i.e. that an increase in unemployment has a weaker dampening effect on inflation the higher the initial level of unemployment, cf. Nymoén (2005). In other words, an increase in unemployment from three to four percent has stronger negative impact on inflation than an increase from four to five percent.

Will the contribution to low inflation from cheaper imports persist? It may. One argument in favour is that cheap imports from low cost countries apply to a wider range of products than before. On the other hand, the structural changes that have led to cheaper imports will sooner or later be completed, and the low inflation impulse will then die out.

### **3.3 What should be done?**

If inflation remains considerably below the 2.5 percent target, how should Norges Bank respond? We shall argue that Norges Bank should pursue a policy that pushes inflation towards the target, but the force of the stimulus, and thus the resulting speed of the increase in inflation, should mainly depend on considerations of the real economy. In light of the current brisk growth of the economy, there should be a moderate tightening of monetary policy. There are several reasons for this view.

An important premise, which we discuss below, is that the current low inflation is not costly to the society. This is not a sufficient argument for a tightening of monetary policy, as clearly the current brisk growth of the economy is not costly either. However, it is nevertheless an important precondition, as it would be harder for Norges Bank to be patient in raising inflation if there were large costs associated with the low inflation.

Instead, we argue below that the low inflation in fact constitutes a golden opportunity to achieve lower unemployment than would otherwise have been possible, possibly leading to lower unemployment for many years in the future.

With the aim of contributing to a stable evolution of the real economy, the current situation seems unbalanced. The economy is rather strong, with brisk economic growth, a positive output gap, and a tight labour market. The risk that a tightening of monetary policy causes a downturn of the economy seems small. While higher interest rates clearly will prolong the period in which inflation is below target, the costs are small, cf. the premise above.

On the other hand, there seems to be a more definite risk that the upturn of the economy becomes too strong. Several issues are involved. A tighter labour market may lead to a too large increase in wage growth, which at a later stage necessitates a tightening of monetary policy. Asset prices may become too high, stimulated by low interest rates and optimism about future growth prospects, in which case a future fall will have a negative impact on the real economy. Finally, consumption and investment may stay above normal levels for several years, as households and firms adjust to low interest rates and high asset prices, implying that imbalances in debt and capital stocks build up. Eventually, the imbalances will require lower levels of consumption and investment, which may cause a downturn of the economy.

Admittedly, the picture is not so clear that we can conclude that the economy is on its way to being overheated. Thus, the situation does not warrant that the Bank “pulls the brakes” by a large abrupt interest rate. However, “pulling the brakes” is not the issue, rather how hard to push the gas pedal, i.e. how strong the monetary stimulus should be. In our view, the strong state of the economy is a clear argument that the stimulus should be weaker, i.e. that the interest rate should be higher. Moreover, if one compares the risks that are involved, we suggest that Norges Bank should err at the tight side, and not at the expansionary side. As discussed in chapter 5, a tightening of monetary policy, above the rate indicated by the Bank, seems in order. On the other hand, we do not know for how

long, and by how much, the interest rates should increase. If the development of the economy turns out to be weaker than expected, and inflation remains low, the interest rate may remain below the neutral rate indicated by the Bank for a longer period.

A possible argument against a tightening of monetary policy is that the inflation target for institutional reasons necessitates a faster increase in inflation. However, as argued in section 2.2, a moderate tightening of the monetary policy will, in our view, be in accordance with the Government Regulation in Monetary Policy, even if it may lead inflation to remain below target for several years.

Below, we discuss the costs of low inflation and the possible gains in the form of lower unemployment. The more detailed discussion of the current economic situation, and the implications for monetary policy, is given in chapter 5.

### **The costs of low inflation**

In NBW-05, it was argued extensively that the current situation with inflation considerably below the 2.5 percent target, does not involve any significant costs to the Norwegian economy. Let us in a headline manner repeat the main arguments given there.

- The low inflation reflects cheaper imports and an improvement of terms of trade, not sluggish demand. Thus, while very low inflation might be a serious problem in a situation with sluggish demand, this is not the situation now.
- Within one strand of modern monetary theory, deviations from the inflation target will distort relative prices, thus leading to inefficient resource allocation. This argument is logically coherent, but the effect seems negligible empirically in the current situation.
- Inflation expectations might fall. However, the survey evidence reported above shows that they have not. And if inflation expectations were to fall, it would not be a serious problem, as it would allow a longer period with expansionary monetary policy and unemployment below its equilibrium rate, i.e. it would involve a gain to society.
- Symmetry: By failing to push inflation up now, Norges Bank would lose credibility that would impair its ability to push inflation down in the future. Again, the argument is logically sound, yet it neglects that the problem is far from symmetric. In a possible future situation with both high inflation and high unemployment, there would be political pressure against high interest rates, and there might be uncertainty as to whether the Bank would be able to ignore this pressure. Yet pursuing an expansionary policy to raise inflation now says nothing about the Bank's ability to ignore political pressure in the future.

Overall, we conclude that while the Bank should aim at higher inflation, the absence of significant costs of low inflation implies that it can be patient, ensuring a stable development of the real economy.

### **Contributing to low unemployment in the coming years.**

The current low inflation constitutes an important challenge for the monetary policy. But it also constitutes an opportunity of achieving a gain that we would have thought to be infeasible, in the form of lower unemployment without adverse long-term effects. The argument is as follows.

There is a broad consensus within the economics profession that there is a lower limit to the rate of unemployment that is consistent with stable inflation. For Norway, we have seen evidence of this lower limit at several instances in the past, where wage and price growth have increased sharply in a situation with tight labour market. In the economics literature, this lower limit has been given several different names; the equilibrium rate of unemployment, the natural rate of unemployment, or the NAIRU, but they all mean essentially the same thing. This equilibrium rate of unemployment is not given by nature, and it depends on how the labour market and wage setting work. For example, if the match between workers' qualifications and employers' demands improves, the equilibrium rate of unemployment falls.

The equilibrium rate of unemployment is usually taken to be the labour market counterpart to potential production, implying that if unemployment is lower than equilibrium unemployment, this will usually correspond to a positive output gap.

The equilibrium rate of unemployment is not the optimal rate of unemployment. Unemployment entails costs for the unemployed, and for the society at large. Thus, it would be desirable to have lower unemployment than the equilibrium rate. However, there is also a broad consensus within the economics profession that monetary policy should not be used as a means of pushing unemployment below its equilibrium level. If one were to do that, it would lead to high and increasing inflation, which would entail costs to the economy. Furthermore, if private agents expected the central bank to pursue an expansionary monetary policy causing unemployment to fall below the equilibrium rate, it could lead to higher wage and price growth. This would undermine the central bank's ability to maintain unemployment below the equilibrium rate, and the only effect would be higher inflation. Eventually, it would be necessary to tighten monetary policy to pull inflation down, and that process might be very costly in the form of lost output and high unemployment.

Precisely for this reason, central banks throughout the industrialised world in some form or another are given price stability as its primary objective. Central Banks should not try to push unemployment down at the cost of high inflation, and private agents should be confident that central banks will not do this.

However, the current low rate of inflation in Norway makes this picture different. Norges Bank can pursue an expansionary monetary policy, pushing unemployment below the equilibrium rate, without sacrificing the inflation target. Indeed, it is by stimulating the economy and pushing unemployment down that inflation can be increased towards the target rate. In some sense, the current situation allows a free lunch. Unemployment can

be below the equilibrium rate for some time, while inflation is increased towards the target.

From this perspective, what would be the appropriate monetary policy? One possibility would be to pursue a very expansionary monetary policy, causing a very tight labour market and thus a rapid increase in inflation. This alternative would have several disadvantages. First, it would involve a considerable risk that the expansion and corresponding increase in inflation went too far, so that inflation ended up too high. A period of tight monetary policy would then be required. Second, the gain of a very low unemployment over a short period of time is probably limited. Third, such policy would involve a large variability in the interest rate, which might increase the risk that investment, saving and borrowing decisions are made on interest rate assumptions that later turned out to be incorrect.

It would seem much better to stimulate the economy in a more moderate way, involving a smaller, but more long-lasting reduction in unemployment, and a slower increase in inflation.

One possible argument in favour of a strong expansion is that this might increase the likelihood that unemployed individuals with weak qualifications also could obtain a job that they might be able to hold on to. Thus, a strong expansion could involve “reverse hysteresis”, in the form of a permanent reduction in equilibrium unemployment (Ball, 1999, argues that reverse hysteresis took place in several OECD countries in the mid 1980s). However, one could also argue that a fairly tight labour market over a longer period might constitute a better opportunity for unemployed with weak qualifications to obtain a job. Thus, the reverse hypothesis might apply under this alternative too.

#### **NBW's view**

**The continued low inflation, considerably below the 2.5 percent target, calls for keeping interest rates low. What should Norges Bank do?**

**The current low inflation does not entail significant costs to the society. Rather, it involves a possibility of reducing unemployment below the level that would otherwise be possible. However, the current strong monetary stimulus to the economy involves a risk that the upturn of the economy becomes too strong. The strong state of the economy is another indication that the monetary stimulus should be weaker than Norges Bank is planning for.**

### **3.4 Changing the inflation target?**

The persistent inflation considerably below the 2.5 percent target has led observers to suggest that the target should be reduced to 2 percent, as in Sweden and the UK (see e.g. Nordea, 2006). It is argued that the 2.5 percent target leads to a too expansionary monetary policy, which inflates property prices and involves a risk of real instability.

As argued in chapter 2, the Government Regulation should not be interpreted in a way that causes Norges Bank to pursue a monetary policy leading to real instability. The 2.5 percent operational target should be viewed flexibly. Extraordinary, temporary disturbances should not be taken into account, and Norges Bank should give priority to the main objectives of price stability and stable developments in output and employment.

Changing the operational target for the monetary policy should not be taken lightly. Stability in the policy framework is an advantage in itself, and changing the target may lead to expectations of new changes in the future. In particular, it is problematic to change the target in a situation where monetary policy misses the target. Such changes will inevitably lead to expectations that deviations from target in the future would also be “resolved” by changing the target. This could seriously undermine the credibility of monetary policy.

The experience of the last few years indicates that in a small open economy, inflation is likely to be more volatile than we previously thought. With this in mind, a change to a different numerical target may give an inappropriate signal of how a flexible inflation targeting regime should work. The appropriate policy response to a temporary cost shock is to accommodate the direct effect on inflation, contributing to stability of the real economy, while ensuring that inflation gradually approaches the target rate.

In financial markets, there appears to be a widespread view that it would have been better if Norway had the same inflation target as our trading partners, i.e.  $1\frac{3}{4}$  - 2 percent. From standard economic theory it is difficult to rationalize this view. There is a strong presumption in economic theory that higher inflation rates over time will be reflected in a depreciating exchange rate, with no effects on real exchange rates. A difference in inflation targets of  $\frac{1}{2}$  -  $\frac{3}{4}$  percent on an annual basis corresponds to a depreciation of 3 – 4.5 percent over a 6 year period. This is “small potatoes” compared to the exchange rate fluctuations we must expect under flexible exchange rates.

Even if there is an international link of inflation rates that is not fully balanced by flexible exchange rates, in contrast to the presumption of standard economic theory, it is not clear that this would be an argument in favour of having the same inflation target as our trading partners. In fact, it might also involve an argument in favour of a higher inflation target than our trading partners. For instance, if wage setters in Norway in a situation with “normal” tightness on the labour market (i.e. unemployment equal to its equilibrium value) set the same wage growth as our trading partners, a higher inflation target than our trading partners, with room for higher wage growth, would allow us to have a tighter labour market, i.e. a lower rate of unemployment.<sup>1</sup> The lower unemployment would be a clear gain for the society.

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<sup>1</sup> Note that the logic of the argument is the same as used by Akerlof, Dickens and Perry (2000). They show that in a world where some workers and firms are near-rational, so that they ignore small deviations from price stability, a low rate of inflation would be ignored by near-rational agents. Thus it would reduce wage pressure, and lead to lower equilibrium unemployment.

When contemplating a change in the operational target, one should not forget the inherent tendency in predictions about the future of being excessively influenced by contemporaneous circumstances. (For example, consider how predictions about future oil prices are linked to the oil price at the time of the prediction, and contrast this with the actual development of oil prices). In the current situation with increased imports from low cost countries and high productivity growth, low inflation seems a persistent phenomenon. In this situation, 2.5 percent inflation also gives sufficient room for nominal wage growth, so there is no risk that downward nominal wage rigidity causes higher wage pressure and higher unemployment (see Akerlof, Dickens and Perry, 1996, and Holden, 2004). However, while the current low inflation reflects an improvement of terms of trade for Norway, a change in the opposite direction may happen in the future. If the terms of trade deteriorate, and/or productivity growth falls, the additional nominal flexibility of a 2.5 percent inflation target might be necessary to avoid increased wage pressure. Recall also that only a few years ago, the argument was made that the inflation target should have been higher than 2.5 percent, to allow for more flexibility of relative wages in a situation where large structural changes would be required.

In a country with large, wage-setting organisations, like Norway, a reduction in the inflation target should also be viewed in relation to the views of the labour market partners. A reduction in the target that is opposed by the wage setters may easily end up in a situation where wage setters aim at higher wage growth than is consistent with the inflation target, and the inevitable result is high interest rates and high unemployment. This does not mean that wage setters should have a veto right in the choice of inflation target, only that wage setters' view is of importance.

The costs of changing the operational target are however not so large that one should never change the target. If it becomes clear that the current target either cannot be realised for many years, or that it requires a monetary policy that is inappropriate on other accounts to realize it, then the target should be changed. However, as is clear from the arguments above, this is in our view far from being the case.

#### **NBW's view**

**The persistent inflation considerably below the 2.5 percent target has led observers to suggest that the target should be reduced, to avoid an expansionary monetary policy involving a risk of real instability. In our view, the existing Regulation gives sufficient flexibility. Changing the operational target for the monetary policy should not be taken lightly. A change to a different numerical target would give an inappropriate signal of how a flexible inflation targeting regime should work.**

## 4 Norges Bank's Monetary policy assessments and strategy

**Publishing the Monetary policy assessments and strategy at the beginning of the strategy period has increased openness and transparency. The first chapter of the Inflation Reports seems its appropriate place. The content of the Monetary policy assessments and strategy should present and discuss the main concerns that lie behind the Boards decisions. In this respect, we miss a more thorough discussion of the labour market and wage formation, of the exchange rate, and of inflation expectations and various inflation measures. On the other hand, some elements, such as simple policy rules and monetary developments, do not seem to warrant an inclusion in the policy assessments.**

**The fan charts indicating the uncertainty associated with the Bank's forecasts are likely to underestimate the true uncertainty associated with the forecasts. Presentations of the fan chart should include a reservation that the assessment of the uncertainty is itself uncertain. If the Bank thinks that recent events indicate that inflation is more volatile than before, it should add a caveat about this when presenting the fan charts. The good track record of Professor Ragnar Nymoen's inflation forecasting model, in spite of a simple approach with little labour input involved, warrants further attention from the Bank.**

### 4.1 The content of the Monetary policy assessments and strategy

From Inflation Report 1/03 on, Norges Bank started publishing its monetary policy assessments and strategy for the preceding four month period. As of Inflation Report 2/04, the strategy was published *in advance* of the strategy period. NBW-05 briefly praised Norges Bank for improving communication in this way; here, we will give a more thorough evaluation.

By publishing its policy assessments and strategy Norges Bank contributed to openness and transparency, making it easier for the market and the general public to understand and evaluate how Norges Bank thinks. By publishing the strategy *at the beginning* of the strategy period, Norges Bank took one further step towards increased openness. This helped the market and general public to understand its decisions when they were made, since the market and general public would already be aware of how Norges Bank viewed the situation. One important consequence would be that the market should be better able to predict Norges Bank's decisions. This is consistent with our findings in chapter 6, although these findings clearly also reflect that the shocks have been smaller than before.

Our evaluation of the Monetary policy assessments and strategy is based on the view that it should include the main concerns that lie behind the Board's decisions. This is how we would expect the market and the general public to view the strategy. As of IR 3/05, this section is the first chapter in the Inflation Report, while it was in Chapter 3 in IR 1/05 and 2/05. We find the new position better. However, it also implies that readers will not have

read the rest of the Inflation Report first, and it becomes more important that the Monetary policy assessments and strategy includes a discussion of the key aspects.

The Monetary policy assessments and strategy in IR 3/05 includes a brief discussion of the development of the economy, with a focus on inflation and the output gap. It presents the baseline scenario, with ample discussion of the uncertainty associated with the forecasts, and also of two alternative scenarios. The presentation of the baseline scenario is valuable, see further discussion in chapter 6, as is the presentation of the uncertainty associated with the forecasts.

There is a brief reference to the development of property prices and credit, making clear that Norges Bank is concerned about these issues. It is concluded that the concern for financial stability suggests that the interest rate should be increased towards a more normal level.

We miss a more thorough analysis of the labour market and wage setting. The labour market is a crucial part of the economy, and wages are clearly a key part of the inflation process. While short run volatility in inflation often is caused by other aspects than wage growth, one would expect wage growth to be a more important factor behind persistent changes in core inflation. Furthermore, the labour market is also subject to important changes via increased influx of workers from new EU member states. We would also like to see a discussion of the exchange rate situation, and the prospects for the future evolution of the exchange rate. Again, this is a variable that is crucial for the future rate of inflation, and thus also for interest rate decisions.

In addition, we think that it would be appropriate with a brief discussion of inflation expectations. On several occasions, Norges Bank has stated how important it is to anchor inflation expectations, cf. e.g. last year's Annual Address: "It has been important to prevent inflation expectations from falling and becoming entrenched at a low level." Yet information about the development in inflation expectations, as measured by TNS Gallup on commission from Norges Bank, is generally absent from the Inflation Report. Although we would emphasize that one should be careful in the interpretation of measures of inflation expectations, as these may not reflect the "true" inflation expectations that form the basis of the key economic decisions, surveys of inflation expectations nevertheless provide information of value for monetary policy.

Finally, we would suggest that the Monetary policy assessments include a discussion of various inflation measures. In its communication, Norges Bank has hitherto chosen to primarily focus on developments in CPI-ATE. For a number of years the bias to the interest rate setting was related to whether CPI-ATE in two, and then in three, years time deviated from 2½% (by anything more than 0.1 percentage points) or not. These days, the chosen interest rate path must lead to inflation reaching 2½% within three years to "look good". Again, CPI-ATE is the chosen measure. However, discussions with the Bank give the impression that the view applied in the internal discussions are much broader than this. A number of inflation measures are considered, and the target is not so much core inflation as it is overall inflation. In a way it seems that the Bank, communication-wise,

has painted itself into a corner, where the broader view applied in internal discussions takes second stage when the judgments are communicated externally. While various inflation measures are presented on pages 33-35 in IR 3/05, this discussion is not reflected in the Monetary policy assessments, and thus it assumes less importance. If the market and general public does not know or understand which weight the Bank attaches to the CPI – ATE relative to other inflation measures, this will impair their ability to predict the Bank's behaviour.

According to Norges Bank's own guidelines its forecasted interest rate path should be cross-checked among other things against interest rates set by simple policy rules. According to Norges Bank, "These simple crosschecks indicate that it may be appropriate to increase the interest rate gradually ahead to a more normal level." That is an understatement, as the rules – the Taylor rule, the Orphanides rule and the rule with external interest rates - indicate that current interest rates are 1-2 percentage points too low (see Chart 1.11 in IR 3/05). We have mixed feelings about these cross-checks. On the one hand, they may indeed work as cross-checks, as they are largely model independent. (Although one should not over emphasize this point, as the rules are based on key concepts in the Bank's decision framework, like the output gap and the neutral interest rate.) On the other hand, there are good arguments against using such rules to decide on actual interest rate setting. As argued by Norges Bank, the output gap is uncertain and the rules have limitations as a reference for a small, open economy, as higher interest rates would have led to an appreciation of the krone and therefore made it more difficult to reach the inflation target. A further possible problem regards communication. When, as now, there is a fairly large difference between the interest rate indicated by the rules and the one chosen by Norges Bank, how should this be interpreted? If the rules are that bad, why are they included in the Monetary assessments? And if the rules are not that bad, how come the Bank deviates that much in its interest rate setting?

One may also question whether the discussion of money growth, measured by M2, and the relationship between money growth and prices, should be included in the monetary policy assessments. Norges Bank mentions that this relationship is unstable due to new financial market products, changes in credit market regulations and developments in international capital markets. Precisely for these reasons the discussion of M2 could be moved to other, less central parts of the Inflation Report.

The policy assessments discuss two alternative scenarios, where the economy is exposed to disturbances. In Inflation Report 1/05, these scenarios are explicitly referred to as tests of robustness of the strategy, but this aspect is slightly downplayed in IR 3/05. In our view, the scenarios do not constitute a proper test of robustness. The disturbances are moderate in size and an appropriate interest rate response is undertaken about six months after the disturbance hits the economy. It seems unlikely that a baseline scenario that is on a path towards the inflation target will fail to satisfy a test like that. And if this is true, it does not constitute a test of robustness.

On the other hand, the alternative scenarios can be useful as a pedagogical device, to illustrate how the Bank will respond to various disturbances that may take place. In that

sense, it could increase transparency and understanding of how the monetary policy works.

#### **NBW's view**

**Norges Bank should be praised for publishing the Monetary policy assessments and strategy at the beginning of the strategy period. The first chapter of the Inflation Reports seems its appropriate place. The content of the Monetary policy assessments and strategy should present and discuss the main concerns that lie behind the Boards decisions. In this respect, we miss a more thorough discussion of the labour market and wage formation, of the exchange rate, and of inflation expectations and various inflation measures. On the other hand, some elements, such as simple policy rules and monetary developments, do not seem to warrant an inclusion in the policy assessments.**

## **4.2 The fan charts**

The policy assessments include the Bank's view on the uncertainty of its forecasts, provided in the form of fan charts which show the probability distribution for the forecasts. In the policy assessments, it is stated that "The fan charts .. illustrate the uncertainty that can be expected based on recent history." From page 19-21 IR 3/05, it appears that the uncertainty is quantified based upon the uncertainty within a small macroeconomic model, on the basis of historical developments in the Norwegian economy, for the period 1993-2005. Furthermore, it is assumed that the errors are normally distributed.

We will argue that the true uncertainty is likely to be greater than what the fan charts indicate. One argument for this view is the large forecast errors made in 2002 for the rate of inflation in several months of 2004, cf. NBW-05 page 48. These fan charts had about the same width as the most recent ones, where the 90 percent interval 2-3 years ahead is slightly above two percentage points. From the fan charts it appears that the forecast error in several months were more than three standard errors away from the point estimate, an event that has less than 0.3 percent probability of occurring. While unlikely events do happen at times, it seems hard to argue that the reasons for the low inflation were that extreme. It seems more appropriate to conclude that inflation uncertainty is higher than previously assumed, either because the previous assessment underestimated the uncertainty, or because inflation uncertainty has increased. Indeed, in his Annual Address 2006, the Governor argued that we may "have to accept a somewhat greater variation in inflation and deviations from the target, as we have witnessed over the past two to three years."

Our conclusion that the fan charts underrate the true uncertainty is consistent with the analysis of Nymoen (2005). Nevertheless, Nymoen argues that the forecast failure was largely avoidable. Furthermore, he presents forecasts based on a small econometric model, which, even if coefficients are estimated in real time, were not subject to the same

forecast failure. In our view, the good properties of Nymoens model, in spite of a simple approach with little labour input involved, warrants further attention from the Bank.

### **Box 4.1 Potential output and the output gap**

The output gap, defined as the difference between actual output and potential output, is a key concept within modern monetary economics, and in the theoretical framework embraced by Norges Bank. The traditional definition of potential output, also used by Norges Bank (see e.g. IR 2/04) is that it is the level of output that is consistent with stable inflation. Traditionally, potential output is measured as trend output, i.e. a smoothed value of actual output. Such measures are the basis for Norges Bank's estimates of potential output, but the Bank also adjusts its measure to take account of aspects that are not well captured by a trend, like changes in regular working hours etc, see IR 2/04.

However, while this is the approach taken by most central banks, there are important problems involved. These problems are acknowledged within the central banks, and also in Norges Bank, but it is fair to say that one has still not resolved them.

One key issue is that in recent monetary theory, potential output is now defined as the level of output that would apply if all wages and prices were flexible, see e.g. Woodford (2003). (This was also pointed out in NBW-05.) Based on this definition, Woodford and others show that optimal monetary policy should aim at minimising a weighed sum of the inflation gap (i.e. inflation minus target inflation) and the output gap, as in the loss function presented in Box 5.1. This has been taken as theoretical support for the traditional approach to monetary policy, where one aims to stabilise inflation and output. However, the problem is that the potential output found by traditional methods, a sort of trend output, is likely to differ considerably from the potential output as defined as flex-price output. Thus, the two approaches will involve different output gap measures, and consequently have different implications for the interest rate setting.

A second problem is that estimates of the current level of potential output are likely to be highly uncertain, because the uncertainty associated with the measurement of the current state of the economy (see e.g. Orphanides and van Norden, 2002). For example, if actual output stagnates, estimates of potential output will be less affected, and the estimate of the output gap may become negative. This would suggest that monetary policy should be expansionary. Yet the stagnation in actual output may reflect a weak development of potential output, and a positive output gap, so that a contractionary monetary policy might be more appropriate.

A further complication, recently shown by Cukierman (2005), is that under fairly plausible circumstances, flex-price output is likely to be more volatile than actual output. If central banks were to follow the theoretical prediction and target flex-price output, thus minimising the output gap, this would imply that monetary policy would contribute to more output volatility. As emphasised by Cukierman, this is something most central bankers would not want to do. However, Cukierman argues that the added volatility would involve a cost that is ignored in modern monetary economics, and that monetary policy in many cases would be better off stabilising output, as is the traditional approach.

It is not clear which practical implications should be drawn from this. Hall (2005) concludes that potential output is not a useful guide to policy making. There is current research trying to measure flex-price output, which would be closer to the theoretical concept. However, Cukierman's findings suggest that one should be careful before adopting flex-price measures of potential output. In our view, these unsettling issues provide an argument for an eclectic and broad approach to monetary policy, drawing widely from other parts of economic theory, and from a more common-sense approach to policy making, as argued by NBW-05.

It is also noteworthy that similar fan charts published by Sveriges Riksbank have 90 percent intervals that are almost three times as wide as those published by Norges Bank. However, the Bank of England publishes fan charts with 90 percent intervals of a similar magnitude to Norges Bank's.

It should be noted, however, that a somewhat more cautious presentation of the fan charts was given by Deputy Governor Jarle Berge in a speech on 27<sup>th</sup> Januar 2006, where he concluded that *“In other words, there are strict, model-based technical assumptions behind the fan charts we use to illustrate uncertainty in our forecasts. It goes without saying that it is difficult to be very precise as to exactly how great the uncertainty will be.”*

The policy assessments also include a fan chart for the interest rate set by the Bank in the strategy period. This fan chart reflects the reaction function of the Central Bank. To give a probability distribution for the interest rate, one has to take a stand on how the Board would react to various shocks that may occur. It is important that the fan charts are consistent with how the Board would react. For example, it would be misleading and unfortunate if the fan chart was constructed on the basis of a reaction function with very moderate use of the interest rate instrument, if the Board itself preferred to use the interest rate vigorously. However, the Bank confirms that the fan chart is constructed on the basis of a reaction function which is attempted to represent the recent decisions of the Board.

#### **NBW's view**

**The fan charts indicating the uncertainty associated with the Bank's forecasts are likely to underestimate the true uncertainty associated with the forecasts. Presentations of the fan chart should include a reservation that the assessment of the uncertainty is itself uncertain. If the Bank thinks that recent events indicate that inflation is more volatile than before, it should add a caveat about this when presenting the fan charts. The good track record of Professor Ragnar Nymoen's inflation forecasting model, in spite of a simple approach with little labour input involved, warrants further attention from the Bank.**

## **5 Monetary policy in 2002-2006**

**Monetary policy operates with long time-lags. Thus, the effects of monetary policy decisions taken in 2002-04 are still being felt in 2005-06. Likewise, decisions taken in 2005 must be judged in light of how the economy performs in 2006 and 2007.**

**The outcome for the output gap and inflation in 2003 and 2004 suggests that monetary policy – viewed ex post - was too tight in the preceding 2-3 years. For 2005 the evidence is less clear. On the one hand, likely estimates for Norges Bank’s “loss function” suggest that a more expansionary policy would have yielded better results, on the other we remain convinced that further rate cuts in 2004 would have increased the present risk of overheating the economy.**

**Throughout 2005, Norges Bank more or less held onto the strategy that was envisaged already by IR 3/04 in November 2004. In our view, this reflects in part that Norges Bank did a good job in its forecasts and policy analysis. However, the remarkable consistency in the strategy and interest rate setting over the last 16 months is also explained by the fact that the global economy has weathered the upturn in oil prices in recent years surprisingly well. Furthermore, the disturbances that have affected the Norwegian economy, have had opposite effects on the interest rate setting. While the recent surge in the oil price has contributed to the ongoing rise in domestic demand, continued changes in import patterns have contributed to keeping imported inflation low. The stability seen in Norges Bank's estimates over the last year for trading partners' growth is also found in the average forecasts for independent forecasters over the same period.**

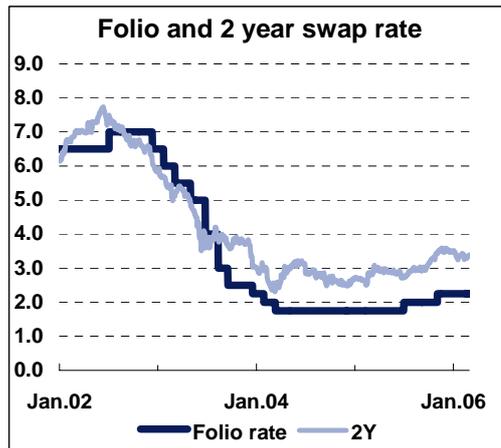
**The Norwegian economy is currently into its third year of above-trend growth. Most sectors of the economy are expanding, some quite rapidly. Labour demand is picking up, and unemployment is very close to historic lows. While wage and price inflation thus far remain low, the present situation calls for somewhat tighter monetary policy than what Norges Bank currently indicates. High credit and asset price growth (see Chapter 3) strengthen this view. We believe that there is greater risk involved by hiking too little, too late, than by hiking too much, too early. In the latter case, it is relatively easy to reverse policy. In the former case, the longer one waits, the greater the likelihood that one has to tighten in greater steps, contrary to what the bank itself sees as a good way of setting interest rates.**

### **5.1 Monetary policy in 2002-04**

**Given the 2-3 years lag inherent for monetary policy to have full effect, it is appropriate to view developments in 2005 and into 2006 in light of decisions made 2-3 years earlier, i.e. from early 2002 on. Having been discussed thoroughly by previous NBWs, we will only deal with them in broad terms here.**

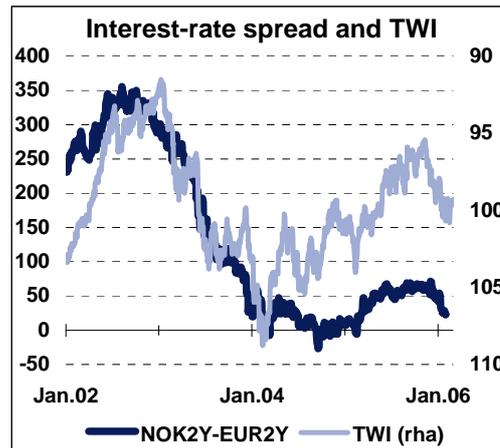
Norges Bank entered and left 2002 with a folio rate of 6.5%, having hiked 50bp in July after higher wage increases than expected, and a similar cut in December when economic activity faltered. This was followed by further cuts in 2003-04, first in six steps down to 2.5%, then – after inflation failed to materialize as foreseen – in another three steps down to 1.75% by March 2004, which was maintained until July 2005.

Chart 5.1



Source: Datastream/DnB NOR Markets

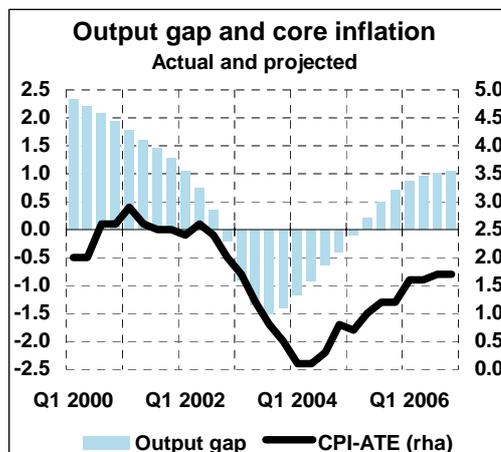
Chart 5.2



Source: Datastream/DnB NOR Markets

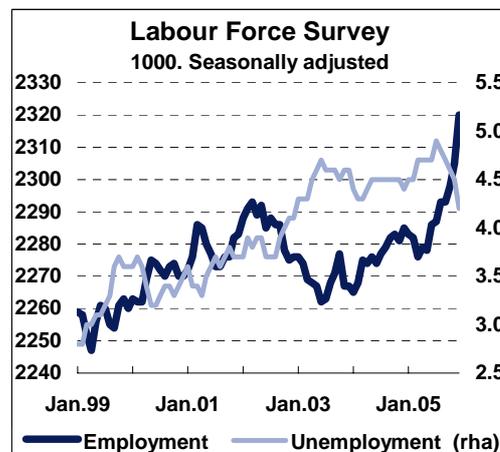
Viewed with the benefit of hindsight, monetary policy over the years 2001-03 failed to meet its targets of 2½ % core inflation and close to full capacity utilization, cf. Chart 5.3. Both the inflation gap (2½% target – actual core inflation) and the output gap were negative, indicating that a more expansionary policy in 2001-03 would have brought both closer to their targets. Also, higher capacity utilization would have led to higher employment over the same period. As these issues were dealt with in more detail in NBW-05, we will not repeat the exercise here.

Chart 5.3



Source: Norges Bank

Chart 5.4



Source: Statistics Norway

Judging the policy results in 2005 is not as straightforward. Core inflation averaged 1.0% in 2005, i.e. 1.5%-points below the target. On the other hand, Norges Bank's latest estimates indicate a positive output gap of 0.3%. In Box 5.1, the outcome is evaluated according to a loss function often used in the literature on monetary policy. Here we show that under the assumptions given there, an outcome where inflation is 1.5% lower than target while the output gap is 0.3% requires that the Bank attached more than twice as large weight on output as it does on inflation.

### Box 5.1 Evaluating the 2005 outcome by use of a monetary loss function

In the literature on monetary policy, central banks are often assumed to evaluate the outcome according to a loss function which penalizes deviations in inflation from target and also the output gap. A loss function of this type, often referred to by Norges Bank, is

$$L = (\pi - \pi^*)^2 + \lambda(Y - Y^*)^2$$

The appropriate policy depends on preferences regarding the output gap relative to the inflation gap. A higher value for the parameter  $\lambda$  indicates that the output gap is viewed as more harmful, and this will result in a smaller output gap, and thus a larger inflation gap (in absolute values) in optimum.

The appropriate policy also depends on the tradeoff between the two gaps, i.e. the effect of a change in the interest rates on the gaps relative to each other. The tradeoff may vary over time, and in particular, it may depend on the response of the exchange rate to the change in the interest rate. But Norges Bank has provided some insight into how it sees this relationship, cf. Chart 5.5 in the main text, where the data is culled from IR 1/05, charts 3.5a-3.5b. Apparently, given the assumption that lower interest rates weakens the krone and increases inflation, later on leading to higher capacity utilization and further inflationary pressure, the relationship is about 1:2, i.e. that the effect on the output gap, measured in percentage points, is about twice as large one-two years ahead as the effect on core inflation.

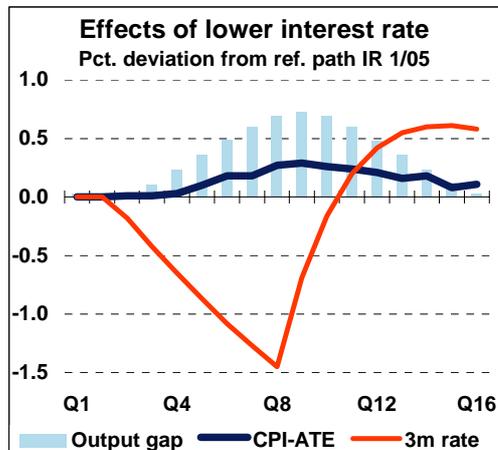
The analytically oriented reader will note that the optimal policy which minimizes the loss function is given by the first order condition

$$\frac{dL}{di} = 2(\pi - \pi^*) \frac{d\pi}{di} + 2\lambda(Y - Y^*) \frac{dY}{di} = 0$$

which, assuming  $2 \frac{d\pi}{di} = \frac{dY}{di}$  (the effect on the output gap is twice as large as the effect on inflation),

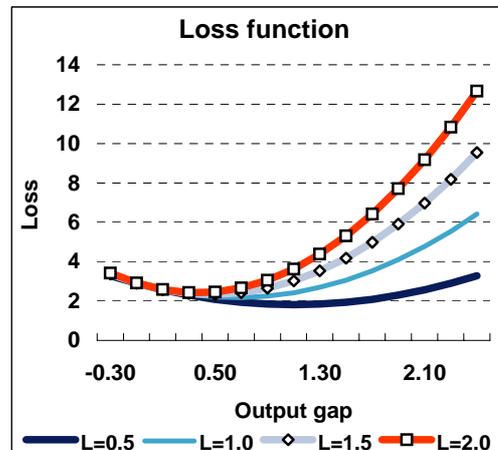
solves for  $\pi - \pi^* = -2\lambda(Y - Y^*)$ . Thus, the 2005 outcome of a positive output gap of  $Y - Y^* = 0.3$  and a negative inflation gap of  $\pi - \pi^* = -1.5$  is optimal if  $\lambda = 1.5/(2*0.3) = 2.5$ , i.e. that the output gap is valued as 2.5 times as important as the inflation gap. Lower values of  $\lambda$  would give a higher optimal output gap, and thus a lower absolute value of the inflation gap. This is indicated in Chart 5.6 in the main text, which shows how the value of the loss function depends on the output gap for four different values of  $\lambda$ . We note that with equal weights attached to the two target, i.e.  $\lambda = 1$ , the optimal combination would have been an output gap of 0.7% and a corresponding inflation gap of 1.3%. Given the effect of lower interest rates in chart 5.3, this would imply that the sight deposit rate could have been  $\frac{1}{2}$ - $\frac{3}{4}$  %-points lower in 2002-03.

Chart 5.5



Source: Norges Bank/DnB NOR Markets

Chart 5.6



Source: Norges Bank/DnB NOR Markets

This conclusion must be weighed against two other considerations, however. First, the costs of the output gap vs. the inflation gap, here captured by the value of  $\lambda$ , depends on the type of shock. Since the low inflation in recent years mainly is caused by cheaper imports, it is not clear to what extent the Bank should adjust for this by pushing domestically generated inflation upwards. Second, the interest rate setting in 2004 can not only be viewed in light of developments in 2005, but must also be evaluated against developments in 2006. As we argue in more detail below, there is now a clear risk of a future overheating of the domestic economy. Lowering rates further in 2004 would have increased the likelihood of an overheating later on. As stated in NBW-05 (p. 43) even the decision to cut rates from 2½% to 1¾% can not have been an uncontroversial one, as the economy clearly had turned the corner by this stage.

**NBW's view:**

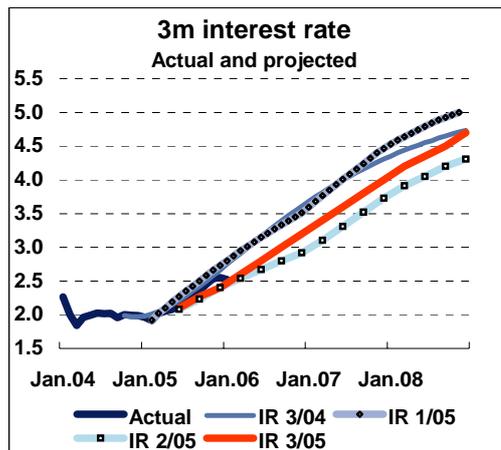
**The outcome for the output gap and inflation in 2003 and 2004 suggests that monetary policy – viewed ex post - was too tight in the preceding 2-3 years. For 2005 the evidence is less clear. On the one hand, likely estimates for Norges Bank's “loss function” suggest that a more expansionary policy would have yielded better results, on the other we remain convinced that further rate cuts in 2004 would have increased the present risk of overheating the economy.**

## 5.2 Interest rate setting in 2005

### Inflation report 3/04 and strategy up to mid-March 2005

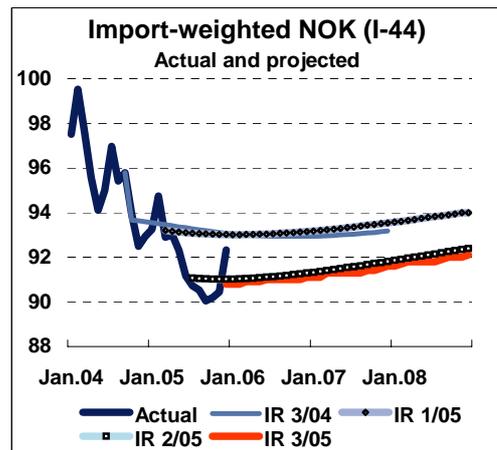
Charts 5.7-5.10 show Norges Bank's forecasts for the four central variables – the interest rate, the import-weighted exchange rate (I44) the output gap and core inflation – from IR 3/04 (November 2004) to IR 3/05 (November 2005). An overall view is that Norges Bank has remained true to its strategy during the course of the year.

Chart 5.7



Source: Norges Bank/DnB NOR Markets

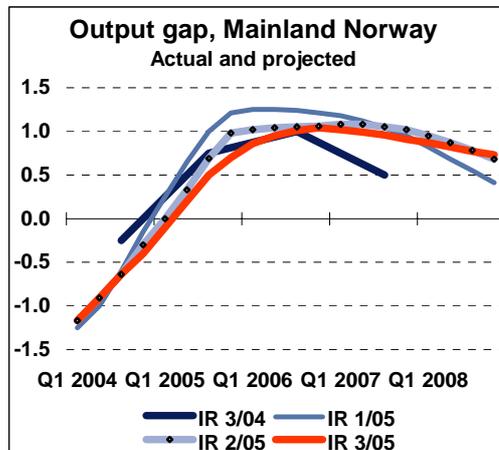
Chart 5.8



Source: Norges Bank/DnB NOR Markets

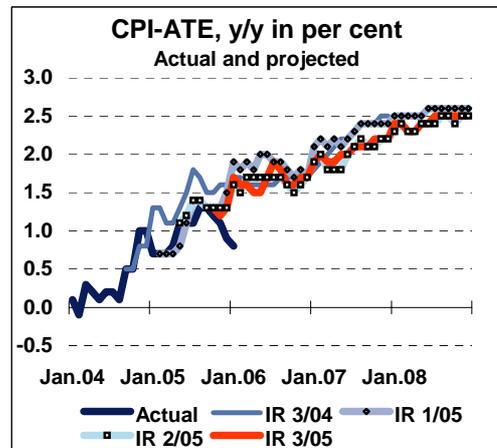
In IR 3/04 Norges Bank based its forecast upon the market forward rate, implying three hikes of 25bp over the course of the next twelve months, the first of which around mid-year 2005. The guiding to the market was that one would “lag behind other countries in setting interest rates at a more normal level.” With Norwegian forward rates on a par with foreign forward rates, and given the assumption of uncovered interest rate parity, Norges Bank expected the I44 to remain more or less stable throughout the three-year horizon. The output gap was expected to turn positive from 2005 on, but remain unchanged at a low  $\frac{1}{4}$  % through 2007. Given these assumptions, core inflation was expected to reach 2½% by late 2007, i.e. at the end of the three-year horizon. This was a path the Board was quite happy with: “*The projections based on market expectations (forward interest rates) seem to provide a reasonable balance between the objective of increasing inflation and at the same time avoiding excessive growth in the real economy. It is the Executive Board's assessment that the economic outlook implies a monetary policy approximately in line with current forward interest rates through the strategy period.*”

Chart 5.9



Source: Norges Bank/DnB NOR Markets

Chart 5.10



Source: Norges Bank/DnB NOR Markets

### Inflation Report 1/05 and strategy up to end-June 2005

By IR 1/05 forward rates had declined somewhat, in particular at the longer end of the curve. Believing that this was due to temporary factors and therefore did not provide an accurate picture of expectations concerning Norges Bank's interest rate setting in the longer term, forward rates in 2007-08 were raised by up to ½ percentage point – **Norges Bank's first step towards publishing its own interest rate forecast.** (More on this in the chapter on communication.) As it turned out, this interest rate path was slightly higher than the one given in IR 3/04 from mid-2007 on, but basically the same for the period up to then. The guidance to the market was that "...the interest rate can after a period, and then gradually, be brought to a more normal level." Elsewhere in the report it was explicitly referred to a "normal level of 5½ %". Regarding the rate setting for the coming four-month strategy period, the bank said that "*The sight deposit rate should be in the interval 1½ - 2½ per cent in the period to the publication of the next Inflation Report on 30 June 2005, conditional on economic developments that are broadly in line with the projections.*" While it was underlined by the bank that the raising of the interval (from the previous 1¼-2¼%) should not to be understood as a central forecast of a folio rate of 1¾% at the end of the four month strategy period, this was the way it was interpreted.

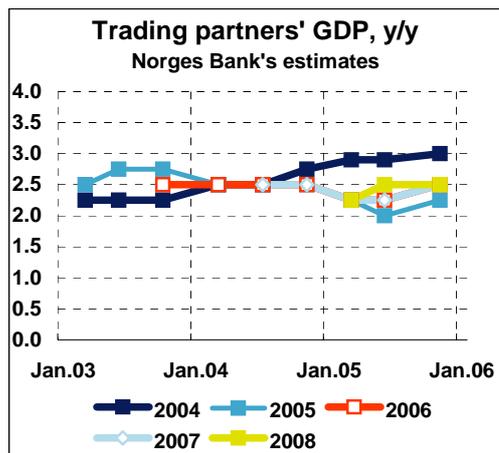
While Norges Bank's growth forecasts for the international outlook was slightly lower than in IR 3/04 (Chart 5.9), the outlook for domestic economy, both in the short and in the long run, was revised upwards (Chart 5.10). This reflected both "exogenous" factors, such as higher offshore investments, as well as endogenous ones, such as higher Mainland investments. Since Norges Bank only publishes aggregated forecasts, we do not know exactly which factors that lie behind the revision, but it is likely that both higher housing investments and higher enterprise investments contributed.

**Note also, that mainland growth over the years 2004-06 has been consistently underestimated.** The same happened in 2001-03, but then with the opposite sign. This is

yet another indication of economists' tendency to underestimate the strength of endogenous forces both in upturns and downturns, perhaps failing to grasp the true dynamics of the economy.

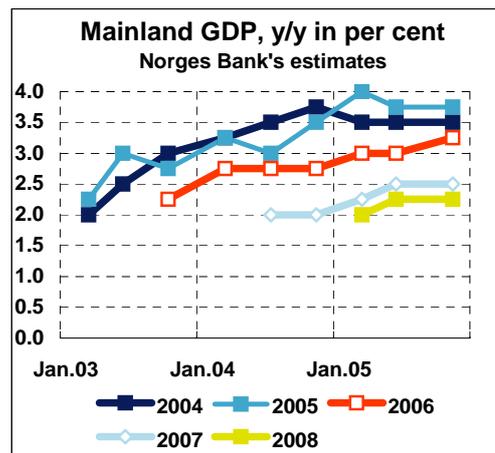
A brief explanation of charts 5.11-5.16: The charts show how Norges Bank's forecasts for central variables have evolved over time, with each line representing the forecast for a given year.

Chart 5.11



Source: Norges Bank/DnB NOR Markets

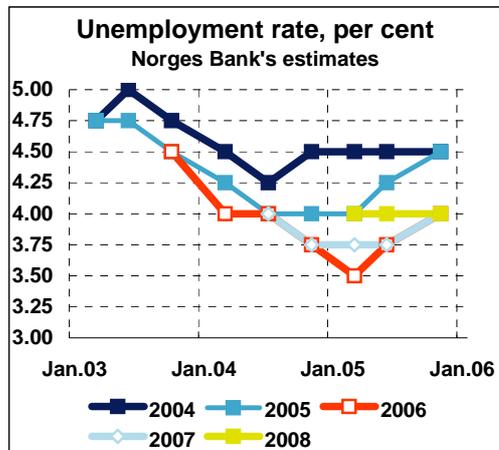
Chart 5.12



Source: Norges Bank/DnB NOR Markets

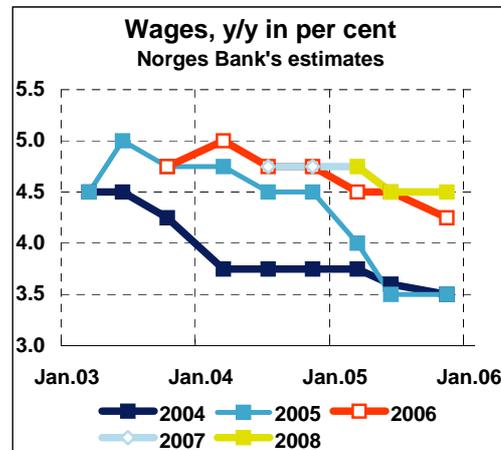
While both domestic growth and the output gap were revised up, this had no consequences for the inflation outlook. Why? First, because the high growth failed to translate into considerably higher demand for labour, leaving unemployment estimates largely unchanged (Chart 5.13). Second, because Norges Bank again had to revise downwards its outlook for domestic wage growth (Chart 5.12). Low inflation, an influx of East European workers, the threat of outsourcing in manufacturing and zero growth in public employment all contributed to this. To the Bank's defense, many of these were new factors, not easily seen, or quantifiable in advance. Finally, actual inflation was somewhat lower than expected in IR 3/04 (Chart 5.8). **Therefore, despite the more positive growth outlook, maintaining the interest rate path from IR 3/04 in IR 1/05 must be regarded as a policy step consistent with the strategy outlined in IR 3/04.**

Chart 5.13



Source: Norges Bank/DnB NOR Markets

Chart 5.14

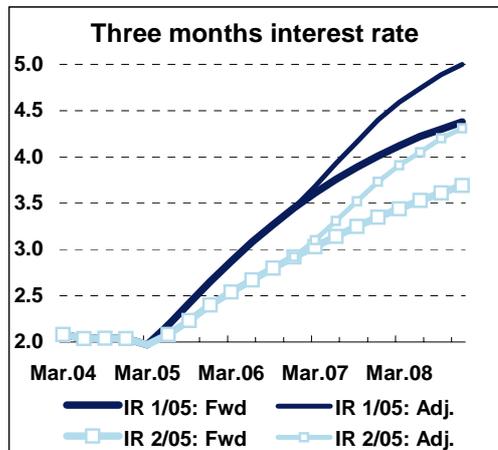


Source: Norges Bank/DnB NOR Markets

### Inflation Report 2/05 and strategy up to early November 2005

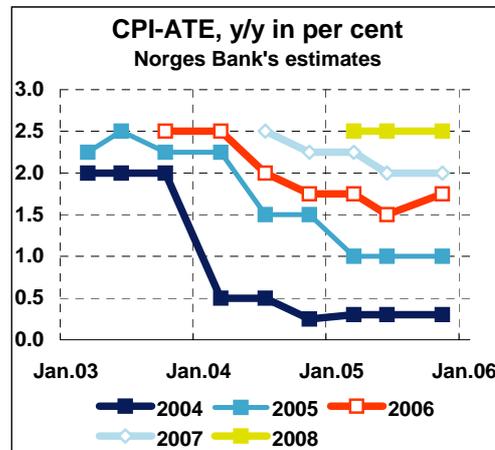
On June 30th Norges Bank delivered the 25bp rate hike that was indicated in its strategy from IR 1/05 (and in fact had been signaled as early as IR 3/04). But by this stage, market forward interest rates had declined further, now expecting a three month money market rate of 3.7% by end-2008, i.e. 0.7 percentage points lower than four months earlier (Chart 5.13). Norges Bank explained the decline in forward rates as being caused by expectations of lower growth and inflation abroad, an explanation not fully consistent with Norges Bank's own estimates in the same report. Forecasts for trading partners' GDP for 2005-08 were, on average, unchanged from IR 1/05, as were the forecasts for trading partners' inflation, bar 2006 that was adjusted down by  $\frac{1}{4}$  percentage point – hardly enough to move the forward curve this much. Rather than maintaining the interest rate path from IR 1/05, Norges Bank chose to apply the same adjusting method – adding up to  $\frac{1}{2}$  percentage point to the market forward rates in its interest rate assumptions from 2007 on (Chart 5.13). The new, and lower, interest rate path was also seen by the Board as the best possible: *"The projections and assessments in this report imply that a path where the key rate gradually – in small, not too frequent steps – is brought up towards a more normal level provides a reasonable balance between the objective of stabilizing inflation at the target and the objective of stabilizing output and employment."* In line with the new interest rate path, one indicated a new 25bp hike within the next four month period by raising the interval accordingly: *"The Executive Board's assessment is that the sight deposit rate should be in the interval  $1\frac{3}{4}$  -  $2\frac{3}{4}$ % in the period to the publication of the next Inflation Report on 2 November 2005, conditional on economic developments that are broadly in line with the projections."*

Chart 5.15



Source: Norges Bank/DnB NOR Markets

Chart 5.16



Source: Norges Bank/DnB NOR Markets

In the absence of a good explanation behind the lowering of the market's interest rate expectations, one may argue that the most consistent would have been to maintain the interest rate path from IR 1/05. This view is reinforced by the fact that Norges Bank maintained its view that rates would increase further after 2008, up to "an assumed normal level of 5½ % in the long term".

However, maintaining the interest path from IR 1/05 would have involved a substantial deviation from the forward rates at the time. With the import-weighted exchange rate having appreciated by about 2% since IR 1/05 (Chart 5.8), this could have led to further appreciation in the short run, increasing the risk that core inflation would remain below the target.

The reduction in expected interest rates contributed to an upward revision of private consumption and mainland investments, and therefore also mainland GDP, in 2007 and 2008 (Chart 5.12). But slightly weaker growth than expected in 2005 implied that the output gap was more or less unchanged on average over the forecasting horizon (Chart 5.9), thus maintaining the assumed steam in the mainland economy, despite a more stimulating interest rate. In addition, expected unemployment was revised up both for 2005 and 2006 (Chart 5.13) and expected wage growth was revised down (Chart 5.14). Consequently, also expected core inflation was revised downwards (Chart 5.16).

### Inflation Report 3/05 and strategy up to mid-March 2006

On November 2<sup>nd</sup>, Norges Bank's Board delivered the next 25bp, raising the sight deposit rate to 2.25%. By this stage, market forward rates had picked up, with an expected three month rate close to 4% by end-2008, a good ¼ percentage point higher than in June. For the first time, Norges Bank's interest rate assumptions deviated from the forward rate not only post-2006, but also to some extent for the near term outlook. In the Bank's words, one had "assumed greater ownership to the interest rate assumptions". (More about this in the chapter on communication.) The new interest rate path was about ¼ percentage point

higher than the one applied in IR 2/05, while the I44 assumption was more or less identical. GDP growth for trading partners was adjusted upwards by  $\frac{1}{4}$  percentage point for 2005-07, mainland GDP growth was adjusted up by  $\frac{1}{4}$  percentage point in 2006 (largely due to higher offshore investments), expected unemployment was revised *upwards* for 2005-07 (as current unemployment failed to decline), while wage growth and core inflation forecasts remained roughly unchanged.

Again, the interest rate path was seen to give a "reasonable balance" between the two objectives. Again, the interest rate would be raised gradually, in "small, not too frequent steps" towards a "more normal level". And again, the interval was raised by  $\frac{1}{4}$  percentage point, to 2-3%, by this stage generally understood to be consistent with the small and infrequent steps. The normal level was no longer communicated explicitly, but the Bank referred to calculations indicating that the neutral real rate of interest at present was in the lower end of the 2½-3½% range, hence close to 5% in nominal terms.

#### **NBWs view:**

**Throughout 2005, Norges Bank more or less held onto the strategy that was envisaged already by IR 3/04 in November 2004. In our view, this reflects in part that Norges Bank did a good job in its forecasts and policy analysis. However, the remarkable consistency in the strategy and interest rate setting over the last 16 months is also explained by the fact that the global economy has weathered the upturn in oil prices in recent years surprisingly well. Furthermore, the disturbances have affected the Norwegian economy, have had opposite effects on the interest rate setting. While the recent surge in the oil price has contributed to the ongoing rise in domestic demand, continued changes in import patterns have contributed to keeping imported inflation low. The stability seen in Norges Bank's estimates over the last year for trading partners' growth is also found in the average forecasts for independent forecasters over the same period.**

### **5.3 Looking forward**

#### **Current situation**

Evaluating the interest rate setting in 2005 also involves discussing whether the current interest rate and outlook for interest rates seem appropriate given the outlook for the domestic economy. We are not fully convinced that this is the case.

The mainland economy is currently growing quite briskly. According to Statistics Norway, Mainland GDP rose by 3.1% in real terms from 2004Q3 to 2005Q3, and an average of forecasts from Norges Bank, Statistics Norway and the Ministry of Finance indicate full year growth of 3.6% in 2005 and 2.7% this year. Given an estimated mainland trend growth of somewhat less than 2½%, the output gap, which Norges Bank estimated at  $\frac{1}{4}$  % for last year, is likely to increase further this year.

There are currently few signs of weakness in the Norwegian economy:

- **Private consumption** rose by 3½% last year and is broadly expected to show similar growth this year. Households' expectations are much higher than long-term averages.
- **Public consumption** rose by about 2% last year and the same is expected for this year. With current oil prices, the fiscal policy guideline (4% rule) opens up for an increase in the oil-adjusted deficit from NOK 66bn in 2006 to NOK 95 bn in 2009, i.e. NOK 10bn in yearly increase of the deficit, equivalent to a stimulus of ¾ % of Mainland GDP. While the Minister of Finance, Kristin Halvorsen, has hinted that the government may actually use less than implied by the guidelines, that remains to be seen.
- **Housing prices** continue to increase, at an underlying annualized rate of around 10%. Housing starts rose last year to almost 32.000 units, the highest since 1982. There are yet no signs of housing activity leveling off, in spite of signals that the interest rate will increase over the next years.
- **Household gross debt** rose by over 13% from end-2004 to end-2005. Overall credit growth is now the highest since early 1988. Adjusted for inflation, one is close to late-1986 levels. Excluding the change in households' insurance claims, household net assets declined by NOK 13bn, even taking account of positive net revaluations.
- **Mainland enterprises' investments** rose by some 7% last year and a similar growth is expected this year. Although both quarterly national accounts and the investment surveys are prone to substantial errors, this growth fits nicely with other reports showing improved business sentiment, higher profitability and increased construction activity other than housing.
- **Offshore investments** rose by close to 20% last year, and the latest investment survey indicate an increase of 15% this year, to the highest level in volume terms ever. While most economic forecasters are currently expecting investments to decline from 2007 on (by 3-5% annually), it is clear that the current high oil prices will put upward pressure on oil producers' price assumptions, with a positive impact on offshore exploration and construction activity.
- The global economy continues to show a great deal of resilience towards the many disturbances it has been exposed to post-2000, with growth in the industrialized world hovering around 2½% and overall global growth a good 1½ percentage points above that. Consequently, **traditional exports** are increasing. While national accounts show a 7% increase y/y in 2005Q3, monthly trade data to December points to a further pick-up in Q4.
- The strong growth is also reflected in the **manufacturing sector**. While business sentiment three years ago was the weakest in a generation, expected production is currently the highest recorded in the sentiment survey's thirty-year history. Most manufacturing industries rate the general outlook as "very good". Orders are 24% higher than a year ago, primarily due to higher offshore investments, but export orders are also higher. Lack of equipment and (skilled) labour is increasingly seen as limiting production.

### **Slow improvement in the labour market**

Up until last autumn, the domestic upturn seemingly had little effect on the **labour market**. Employment growth was much slower than what could be expected given

overall production growth. Similarly, unemployment seemed stuck at around 4½%. Several factors may explain the slow labour market response up to now.

- First, increasing labour demand, in particular in the construction sector, has partly been met by an influx of Eastern European workers, following the EU enlargement May 1<sup>st</sup> 2005. UDI data show an increase of about 5000 work permits both in 2004 and 2005. In addition come foreign enterprises using foreign workers and unregistered workers.
- Second, as mentioned, public sector employment has remained more or less unchanged for four years, in stark contrast to the average annual growth of 3% seen from 1970 to 2001.
- Third, average working hours have increased, due to three sets of factors: More overtime, less part-time work and a substantial reduction in sickness leave. Thus, increased demand for labour has to some extent been met with increasing working hours rather than more employees.

While some of the above factors may be considered permanent, such as a continued immigration from the new EU nations, others are probably not. Public sector employment is now set to increase. It is likely that the decline in sickness leave will halt, as cyclical upturns traditionally has led to increased sickness leave. And there are obviously limits both to overtime and increased full-time work. Finally, an improved outlook may in itself increase employers' willingness to take on labour.

In fact, there are now clear indications that the demand for labour is picking up. First, labour force survey employment rose by an annualized 3% in the half-year to December last year. Second, a number of surveys, such as DnB NOR's annual enterprise survey, Statistics Norway's manufacturing sentiment survey and NHO's half-yearly member survey all show increasing hiring ambitions. Third, a number of surveys and micro observations indicate an increasing lack of skilled labour. By end-February there was almost 22.000 unfilled vacancies registered at the labour market offices, 53% more than a year ago, and the highest in five years. In construction and manufacturing the number of vacancies has doubled in a year's time. Fourth, Aetat data also show an accelerating decline in unemployment, with seasonally adjusted unemployment including ordinary labour market measures declining by 16% over the last six months, against a 7% decline over the preceding six months.

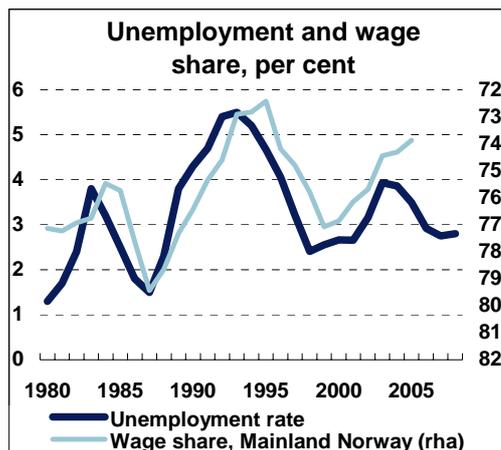
#### **No inflationary pressure so far**

So far, the tighter labour market has apparently not caused wage inflation to pick up. Estimates for last year are on average around 3½%, i.e. on a par with wage growth in 2004, which was the lowest in a decade. Quarterly data up to 2005Q3 supports these estimates. Despite the increased pressure, there are many reasons to expect a moderate outcome of this spring's bi-annual wage negotiations. The "threat" from cheaper foreign labour prevails. Memories of the Summer 2002 rate hike and the following NOK strengthening and manufacturing employment decline are still fresh. And it is likely that the trade unions will avoid creating too much havoc in the first wage negotiations for the new red-green government. Further, trading partners' wage inflation is around 3%, and

domestic CPI inflation is low. Indeed, the largely blue-collar trade union LO has indicated that around 3% nominal wage growth would be in line with competitors' wage growth and secure improved purchasing power in real terms. Current estimates for wage growth this year is in the 3½-4¼% range, with real wage growth in the 2-2½% range, i.e. on a par with recent historical trends.

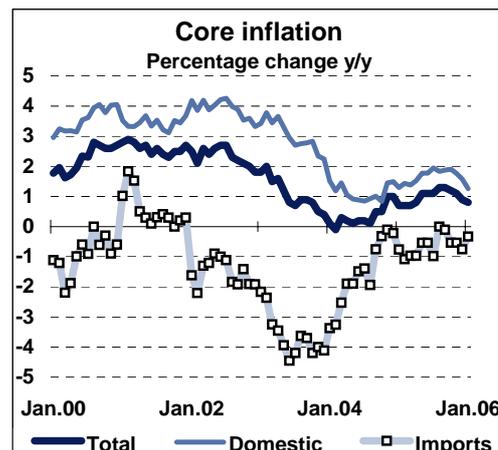
There are some upside risks to these estimates, however. The main wage negotiation rounds every second year tend to give higher wage growth than the intermediate ones. Traditionally, the engineering industry starts these wage rounds and set the frames for the following negotiations. This industry currently enjoys high profitability and record-high order reserves, and may therefore be willing to pay itself out of a possible conflict. High profitability in later years and most likely high dividends, bonuses and wage drift for leading employees may also worsen the climate for wage moderation. Historically, periods of high profitability has been followed by periods of decreasing profitability when the labour market tightens, in Chart 5.17 shown by an increasing share of factor income accrued by labour (“wage share”).

Chart 5.17



Source: Norges Bank/DnB NOR Markets

Chart 5.18



Source: Norges Bank/DnB NOR Markets

**Core inflation** (CPI-ATE) remains low, pulled down both by a continued decline in import prices, currently around -½% y/y, and meagre "domestic" inflation, a result of overall low inflation, increased competition and low wage growth. Clearly, inflationary pressures are, at best, very weak. Furthermore, current inflation continues to undershoot the 2½% target by a wide margin.

### Why raising interest rates?

In the context of relatively high growth in the real economy on the one hand, and low inflation on the other, Norges Bank is confronted with a difficult balancing act. Roughly speaking, the Bank may commit two types of errors: Either tighten too much too early and risk strangling demand and fail to deliver the designated 2½% CPI growth. Or tighten

too little, too late and risk a later overheating of the economy. In our view, the bank would do better by erring on the former than the latter.

First, there is no doubt that interest rates currently are below their neutral level. In IR 3/05, Norges Bank indicated a neutral level of  $2\frac{1}{2} + 2\frac{1}{2} = 5\%$  (see above). Even though one may argue that both the real rate and the inflation component may be lower than the indicated  $2\frac{1}{2}\%$ , it is hard to put forward empirical or theoretical arguments for neutral rates below 4%. And normally in a cyclical upturn we would expect interest rates to be above rather than at, or below, their neutral level. As argued by the Governor himself, in last year's Annual address, *"A real interest rate that is lower than the neutral rate will stimulate activity even after the effects of the interest rate fall itself have been exhausted."* By keeping interest rates at current low levels, the Bank is stimulating economic activity at a point where such stimulus cannot be seen to be needed, cf. the description of the state of the economy above.

Second, an interest rate below neutral levels gives incentives to borrow and invest. As mentioned, domestic credit growth is at an 18-year high, and households have negative financial investments adjusted for insurance claims. We will not argue that the household or enterprise sector is in immediate danger of becoming overburdened with debt, given a relatively solid financial balance overall. The private sector is likely to cope well with a normalization of interest rates. Likewise, banks' tighter credit standards, improved risk-evaluating systems and high earnings make a banking crisis, like the one seen in the early 1990s, highly unlikely.

However, as discussed in more detail in Chapter 3, high asset prices do lead to higher investments, as households and enterprises rush to cash in on the profits to be made when second-hand prices outsize replacement costs. This effect is amplified by the current low interest rates. This process not only involves a risk of over-investing (as price signals become blurred), but it also means that future investments are brought forward. When interest rates eventually increase, and households and enterprises adjust their capital holdings to the higher interest rates, an investment boom will be reflected in a subsequent investment bust, thus increasing the volatility of the real economy. Do we have such a boom now? It seems likely in the housing and secondary homes markets, probably also in real estate construction.

Third, while current inflationary pressure is negligible, the risks are, in our view, biased to the upside. This relates in particular to the increasing demand for skilled labour which, if not leading to high tariff increases this spring, may lead to high wage drift throughout the year, possibly leading to accelerating wage growth in 2007 and 2008. Experience tells us that it might be costly to bring wage growth down once it has picked up, and possibly also raised inflation expectations. Further, while the globalization process has a long way to run, most likely putting downward pressure on Norwegian prices for a number of years to come, one cannot rule out that some of the greatest steps have been taken. Immigration from Eastern European countries is likely to continue, but not necessarily with the same speed as seen the latest years. Higher growth in the originating countries will, over time, make it less and less attractive to migrate. In China's case demographic factors imply that

the enormous reserves of "surplus" labour will be emptied, and that China already has ambitions to upgrade its labour force to increase value added per worker, as other Asian nations have done before them.

One argument against raising interest rates now is that the exchange rate may strengthen, reducing imported inflation and weakening cost-competitiveness and hence activity in the exposed sectors. This would dampen inflation, probably causing undershooting of the inflation target in three years time. But there are some caveats to this reasoning.

We continue to believe that there is some room for manoeuvre for Norges Bank relative to European interest rates. The exchange rate is affected by a number of factors, leading to volatility in the exchange rate that outstrips the effect of a moderate increase in the interest rate. For most fx traders, a moderate interest rate differential is of little interest, as daily changes in exchange rates can easily wipe out any gain from positive interest rate spreads. In contrast, a large interest rate differential might lead to reaction from the retail investors and borrowers, causing more fundamentally driven foreign exchange flows.

It is important to avoid a large, and possibly long-lasting positive shift in the exchange rate, as this may lead to an irreversible process of outsourcing manufacturing production. Therefore, our advice would be to maintain a cautious, step-by-step tightening process, by gradually increasing the interest rate and gradually signaling higher rates going forward.

#### **If imported inflation remains low**

What if imported inflation remains low? Table 5.1 below gives a sketchy picture of the alternatives at hand. In the first column we have presented the weights in the CPI-ATE attached to imported and "domestic" inflation. Statistics Norway labels the former as imported consumption goods. The split between the two is not straightforward since some domestically produced goods and services may be imported, and vice versa.

**Table 5.1**

|                                  | (1)<br>Weight | (2)<br>Norges<br>Bank <sup>1)</sup> | (3)<br>Average<br>1990-1999 | (4)<br>Average<br>2000-2005 | (5)<br>Target<br>being met |
|----------------------------------|---------------|-------------------------------------|-----------------------------|-----------------------------|----------------------------|
| Import prices                    | 0.3           | 2.5                                 | 1.3                         | -1.3                        | -1.0                       |
| Contribution to CPI-ATE          |               | 0.8                                 | 0.4                         | -0.4                        | -0.3                       |
| Hourly wage growth, Mainland N   |               | 4.5                                 | 4.6                         | 4.8                         | 6.1                        |
| Productivity growth, Mainland N. |               | 2.0                                 | 2.5                         | 2.7                         | 2.0                        |
| Domestic inflation               | 0.7           | 2.5                                 | 2.7                         | 2.8                         | 4.0                        |
| Contribution to CPI-ATE          |               | 1.7                                 | 1.9                         | 2.0                         | 2.8                        |
| Core inflation                   |               | 2.5                                 | 2.3 <sup>2)</sup>           | 1.6 <sup>2)</sup>           | 2.5                        |

1) See, e.g., Governor Svein Gjedrem's speech for NHO's Board, September 19<sup>th</sup> 2002. Here, only domestic wage growth was discussed. But if the model is to hold, imported inflation must equal 2.5%.

2) CPI-AE, i.e. adjusted for energy prices, and not tax changes.

In column (2) we illustrate Norges Bank's thinking around "sustainable" wage growth, as presented e.g. for NHO's Board in September 2002: Given an inflation target of 2½% and a trend productivity growth of 2%, there is room for a domestic wage growth of 4½%.

According to Norges Bank, this fits nicely in with the experience from the 1990s, with 4½ % hourly wage growth (annual wage growth was 4.3%), 2% productivity growth, a stable exchange rate and an inflation of 2½%. Note that import prices were not discussed specifically, but if the model is to hold, imported inflation must be equal to domestic inflation, i.e. 2½%.

Column (3) shows the empirical evidence for the period 1990-1999. When the 2½% target was chosen in March 2001, Norges Bank wrote in its letter to the Ministry of Finance that the target was close to the average inflation recorded for the 1990s. From 1989 to 1999, consumer prices rose by an average of 2.4% per year. A measure of core inflation (CPI-ATE) is not available before 2000, but excluding energy prices consumer prices rose by an average of 2.3%. Over the same period prices of imported consumer goods on average rose by 1.3% annually (of which 0.2 percentage points may be credited to a similar average annual appreciation of the import-weighted exchange rate). Domestic core rose by around 2.7% annually, somewhat higher than we would expect given the average annual growth in hourly wages and productivity of 4.6% and 2.5%. However, the difference is not great in view of the many possible sources of errors, including that wage and productivity growth is for mainland Norway, while inflation is measured by consumer prices, and that enterprise margins may vary over time.

Column (4) shows that in the period 2000-2006, domestic wage, productivity and price growth were essentially as in the 1990s, while import price growth was much lower, leading to core inflation of 1.6 percent on average.

But what if import prices continue to decline, with productivity growth remaining at 2%? In column (5) we have illustrated what it might take to achieve the 2½% target. Here, wage growth averages 6%, implying a real wage growth of 3½%, i.e. well over underlying productivity growth. This would clearly be a cause of concern, in particular as the economy becomes more open over time, even if the decline in import prices does create some room for higher wage growth.

A scenario like this has been used as an argument that the inflation target should be reduced, cf. e.g. Nordea (2006). However, we do not think that this conclusion is warranted. The Governor has been quite explicit that the Bank will not pursue a monetary policy which aims at pushing up wage growth to unsustainable rates. A better strategy is to stimulate the economy in a more moderate manner, which eventually will push inflation up, also via higher import prices, and possibly via a weaker krone. Note also that domestic inflation the last 15 years has been considerably above 2%, implying that if the inflation target were to be reduced, combined with an increase in imported inflation, domestic inflation would have to fall considerably.

**NBW's view:**

**The Norwegian economy is currently into its third year of above-trend growth. Most sectors of the economy are expanding, some quite rapidly. Labour demand is picking up, and unemployment is very close to historic lows. While wage and price inflation thus far remain low, the present situation calls for somewhat tighter**

**monetary policy than what Norges Bank currently indicates. High credit and asset price growth (see Chapter 3) strengthen this view. We believe that there is greater risk involved by hiking too little, too late, than by hiking too much, too early. In the latter case, it is relatively easy to reverse policy. In the former case, the longer one waits, the greater the likelihood that one has to tighten in greater steps, contrary to what the Bank itself sees as a good way of setting interest rates.**

## **6 Communication**

**Norges Bank is a good communicator. The Bank has taken a number of steps to improve its communication with the market and the public at large over the years, and continues to do so. This reflects – as we see it – a genuine commitment to transparency and openness. While this may be viewed in light of the Bank’s role as a public body, taking decisions that are important for households and enterprises, it is also believed to increase the efficiency of monetary policy.**

**Norges Bank’s communication with the market over the last year has been transparent, consistent and – overall – good. Market reactions to interest rate meetings have in general been slightly smaller than in previous years.**

**We applaud the decision of the Bank to publish its own interest rate forecast, with effect from IR 3/05 on. This has a number of benefits, such as giving the best possible illustration of the optimal interest rate path, enhancing monetary policy efficiency by being more transparent, facilitate a cross-check with market forward rates, and leading to unbiased forecasts for other variables. Norges Bank has also received international praise for this step. While there are some possible arguments against publishing an optimal interest rate path, these are in our opinion of minor importance.**

### **6.1 Some general issues**

Norges Bank communicates to the market and the general public via a number of different channels. Most important of these is the Inflation Report, which contains key information about the economy, analyses of policy relevant issues, the monetary policy assessments and strategy, and so on. The monetary policy decisions are also communicated and explained in press conferences and press releases.

The Annual Report serves a useful purpose by presenting the Bank’s own evaluation of its conduct. This report is submitted to the Ministry of Finance and communicated to the King in Council and to the Storting in the Government’s Kredittmeldingen (Credit Report). The Governor of Norges Bank provides an assessment of monetary policy in an open hearing before the Standing Committee on Finance and Economic Affairs in connection with the Storting deliberation on the Credit Report.

However, the Bank also produces several other publications. The biannual report on financial stability provides key information and well executed analyses on the financial stability. The Bank also makes publications on specific issues of interest. Some of these, like the Staff Memos, are intended to encourage comments from colleagues and other interested parties.

In addition to this, the Governor and Deputy Governor give a number of speeches throughout the country on monetary policy issues; in 2005, 22 speeches were given.

At times (once in 2005), the Governor writes newspaper articles.

Norges Bank also arranges seminars and conferences, often with a broader or more academic perspective, and less related to current monetary policy issues.

In our view, Norges Bank continues to take noteworthy, and sometimes bold, steps, both large and small, in improving its communication with the market and the public at large. In addition to the optimal interest rate path discussed in more detail in section 6.3, we would like to mention

- With effect from IR 2/04 the monetary policy strategy for the coming four-month was published.
- With effect from IR 3/04 a box on page 2 lists both the Board meetings where the strategy was discussed and the coming Board meetings for which the strategy applies.
- With effect from IR 1/05 one introduced the six criteria for an appropriate future interest rate path, contributing to a further understanding of which factors that Norges Bank considered to be of particular importance.
- With effect from IR 3/05 the chapter on monetary policy assessments and strategy was moved to the beginning of the report, demonstrating that this chapter gives the essence of the report.

Also, Norges Bank continues to deliver, both in reports and speeches, analyses that we, to our best judgment, consider to be of good quality. These not only serve the purpose of broadening and deepening the public's understanding of how the economy works, they also provide insight into what issues Norges Bank considers to be of importance and are thus an integral part of the transparency the Bank adheres to.

Norges Bank meets regularly with market actors. Every four months the inflation report is presented at meetings with analysts and traders in five cities - Oslo, Copenhagen, London, New York and Stockholm. Also, there are separate meetings with Norwegian chief economists and chief dealers, both twice a year. In addition, some private sector analysts are welcomed to the Bank on an individual basis. To our knowledge, this further enhances the Bank's communication with the market and is therefore appreciated. In its one-day meeting with the Bank, NBW also met open and dialogue-oriented personnel.

Overall, this provides a picture of a central bank that is determined to be open and transparent, and over the years have taken many steps, large and small, towards improving its communication. While such steps may be motivated by a belief that this will enhance the efficiency of monetary policy, they are also *bold*, in the sense that by being transparent and providing external observers with the analyses and judgments underlying its decisions and strategy, the Bank also makes itself more open to external criticism.

**NBW's view: Norges Bank has taken a number of steps to improve its communication with the market and the public at large over the years, and continues to do so. This reflects – as we see it – a genuine commitment to**

**transparency and openness. While this may be viewed in light of the Bank's role as a public body, taking decisions that are important for households and enterprises, it is also believed to increase the efficiency of monetary policy.**

## 6.2 Communicating with the market

If Norges Bank's communication is transparent, consistent and precise, each monetary decision should be regarded as a consequence of objectives, plans, forecasts and the Bank's response function communicated at earlier stages; as well as all new "external" information since the last decision. Only genuinely new information on economic developments since the previous interest rate decision should make the Bank deviate from the announced interest rate path.

One indication of the quality of Norges Bank's communication with the market is the view of market participants. In general, agents in the financial markets think highly of the performance of Norges Bank and regard the Bank as a relatively clear communicator, where future actions may be predicted with some certainty.

Another way to gauge the information is to consider the movements in market prices following the publication of the decision. If the decision is anticipated, market reactions should be muted. If not, Norges Bank has surprised the market.

### Norges Bank moves the markets

One way to investigate the transparency of Norges Bank is to look at the change in key financial variables after a rate decision. This will not provide a complete picture as to how the Bank moves the market by its communication alone, since some speeches by the Governor, most notably the Annual address, have from time to time also been used as an occasion to provide signals on future interest rate setting. Table 6.1 presents the average daily changes in five such variables – the three month money market rate, the one- and two year interest rate swaps, the 10 year government bond rate and the trade-weighted exchange rate (TWI). We have chosen to look at changes in the interest rate differentials vis-a-vis Euro interest rates, thus excluding changes in domestic interest rates that are purely caused by external forces. If the change (or lack of change) in the folio rate was expected by the market, one would expect only minor changes in the interest rate differentials and, for that matter, in the exchange rate.

**Table 6.1 Daily changes in key financial variables (average absolute values)**

|      | 3m diff, bp |     | 1y diff, bp |     | 2y diff, bp |     | 10y diff, bp |     | TWI, % |     |
|------|-------------|-----|-------------|-----|-------------|-----|--------------|-----|--------|-----|
|      | events      | all | events      | all | events      | all | events       | all | events | All |
| 1999 | 15          | 4   | 9           | 4   | 10          | 4   | 4            | 3   | 0.1    | 0.2 |
| 2000 | 6           | 2   | 4           | 3   | 4           | 4   | 3            | 2   | 0.2    | 0.2 |
| 2001 | 6           | 3   | 9           | 4   | 9           | 4   | 2            | 2   | 0.2    | 0.2 |
| 2002 | 12          | 3   | 12          | 4   | 10          | 4   | 3            | 3   | 0.2    | 0.2 |
| 2003 | 12          | 13  | 17          | 4   | 18          | 5   | 9            | 4   | 0.5    | 0.3 |
| 2004 | 4           | 1   | 6           | 3   | 7           | 3   | 4            | 3   | 0.3    | 0.3 |
| 2005 | 3           | 1   | 4           | 2   | 6           | 2   | 4            | 2   | 0.2    | 0.3 |
| Avg. | 9           | 3   | 10          | 4   | 10          | 4   | 4            | 3   | 0.3    | 0.2 |

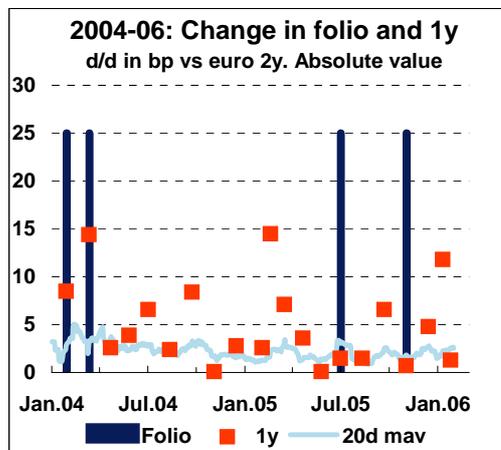
Source: Datastream/DnB NOR Markets. Events indicate days with interest rate decision or key speech, while all indicate average for all trading days.

On average, the spread between Norwegian 3m-, 1y- and 2y-interest rates and their European counterparts moves by 9-10 bp on days where events like interest rate meetings or key speeches take place, while the average for all days is 3-4 bp. However, there is no discernible effect on the 10-year government bond rate or the trade-weighted exchange rate. (The same applies to the EURNOK-rate.)

Over the last six years, one year stands out; 2003 saw the largest changes in the folio rate, and also the largest changes in interest rates after meetings or speeches. Both 2004 and 2005 have been relatively eventless in comparison. Yet, the market changes after Norwegian rate meetings continue to be somewhat larger than corresponding changes following interest rate meetings in UK, Sweden and the Eurozone. This was discussed in more detail in section 5.2 in NBW-05. Since NBW-05 also discussed the period 1999-2004 extensively, we will in the following only look into the last twelve months or so.

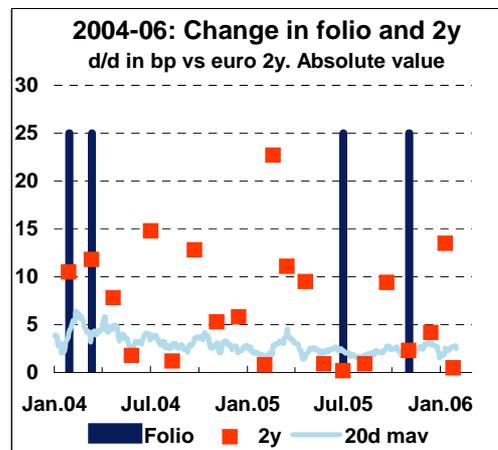
In the discussion that follows, we limit the study to changes in the one- and two-year interest rate differentials. The charts below show the absolute value of the changes in basis points (bp) in the folio interest rate on each rate meeting (the bulk of the observations are zero), and the absolute value of the corresponding (same-day) changes in the one- and two-year interest rate differentials against similar Eurozone interest rates (red dots). Also, a 20-day moving average of the latter is displayed. In addition to the rate meetings, we have included the market reactions to the Annual address in 2005.

Chart 6.1



Source: Datastream/DnB NOR Markets

Chart 6.2



Source: Datastream/DnB NOR Markets

Table 6.2 shows the outcome of the ten latest interest rate meetings and the parts of the adjoining statements that we see as most important. The underlining (bold types) is our own.

**Table 6.2 Interest rate meetings 2005-06 (changes in basis points)**

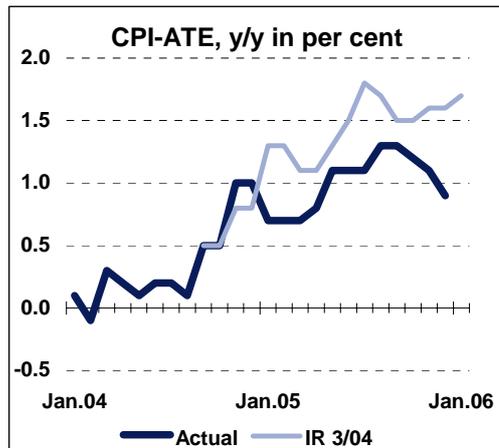
| Date        | Rate ch. | Key statement(s)  | Swap spreads |        |
|-------------|----------|---|--------------|--------|
|             |          |   | 1y spr       | 2y spr |
| 2-Feb-2005  | 0        | <b>[no] clear alternatives</b> to leaving the interest rate unchanged. ... The prospect of continued low inflation...implies that we <b>should lag behind</b> other countries in setting interest rates at a more normal level. ...further interest rate reductions are now less likely.  | -3           | -1     |
| 16-Mar-2005 | 0        | ...the interest rate can <b>after a period, and then gradually, be brought to a more normal level</b> . The sight deposit rate should be in the <b>interval 1½-2½%</b> in the period to the publication of [IR 2/05]. ...further interest rate reductions are now less likely. The lower limit of the strategy interval has therefore been increased to 1½ per cent.  | -7           | -11    |
| 20-Apr-2005 | 0        | ...assessments presented [in IR 1/05] indicate that the interest rate will <b>rise after a period and at a gradual pace</b> ... Although a gradual rise in the interest rate seems to provide a good balance between the different objectives...it is <b>too early</b> to increase the interest rate at this monetary policy meeting.   | 4            | 9      |
| 25-May-2005 | 0        | A development where the interest rate rises gradually - in <b>small, not too frequent steps</b> - was [in IR 1/05] considered to provide a good balance between the different objectives. The outlook for inflation and activity has not changed substantially since [IR 1/05]. As <b>an alternative, [one] considered increasing the interest rate already at this meeting</b> [but] did not find grounds...to deviate from expectations in the money and foreign exchange markets at present.   | 0            | 1      |
| 30-Jun-2005 | +25      | ...a path where the key rate <b>gradually – in small, not too frequent steps – is brought up towards a more normal level</b> provides a reasonable balance between the objective of stabilising inflation at the target and the objective of stabilising output and employment...the sight deposit rate should be in the <b>interval 1¾ - 2¾%</b> [up to IR 3/05].  | -1           | 0      |
| 11-Aug-2005 | 0        | ...assessment in [IR 2/05] was that the interest rate may <b>gradually – in small, not too frequent steps</b> – be brought up towards a more normal level...[and lie in the] interval 1¾-2¾ per cent [up to IR 3/05]. New information... does not provide grounds for deviating from the...path envisaged.  | -2           | -1     |
| 21-Sep-2005 | 0        | ...assessment in [IR 2/05] was that the interest rate may <b>gradually – in small, not too frequent steps</b> – be brought up towards a more normal level...[and lie in] the interval 1¾-2¾ per cent [up to IR 3/05]. Developments in output, demand and underlying inflation have been consistent with the projections in [IR 2/05]... <b>One option was to increase the interest rate at this meeting, but we found it appropriate to leave the interest rate unchanged.</b>  | 7            | 9      |
| 2-Nov-2005  | +25      | Interest-rate setting since this spring has been oriented towards a <b>gradual increase</b> in the interest rate – in <b>small, not too frequent steps – towards a more normal level</b> ... this strategy still appears to provide a reasonable balance between the objectives of monetary policy... The [IR 3/05] monetary policy strategy...is that the sight deposit rate should lie in the <b>interval 2-3 per cent</b> in the period to the publication of [IR 1/06].   | -1           | -2     |
| 14-Dec-2005 | 0        | Developments in output, demand and inflation do not differ substantially from the projections in IR 3/05... There are prospects that the interest rate will increase further, in small, not too frequent steps.   | -5           | -4     |
| 25-Jan-2006 | 0        | Monetary policy is oriented towards a gradual increase in the interest rate – in small, not too frequent steps – towards a more normal level... The analyses in [IR 3/05] <b>implied an increase in the interest rate in the first quarter, at the monetary policy meeting in January or March</b> , and further increases in the interest rate thereafter. New information...provides <b>mixed signals</b> ... The <b>risk factors</b> on each side seem to be <b>somewhat more marked</b> now, but <b>do not as a whole provide grounds for changing the assessment</b> of the outlook. | -1           | 0      |

Source: Norges Bank, Datastream and DnB NOR Markets.

After the meeting on December 15<sup>th</sup> 2004, the Board said that *"it would exercise caution with regard to further interest rate reductions."* In February 2<sup>nd</sup> this was rephrased to further cuts now being *"less likely"*. Markets did not react to this.

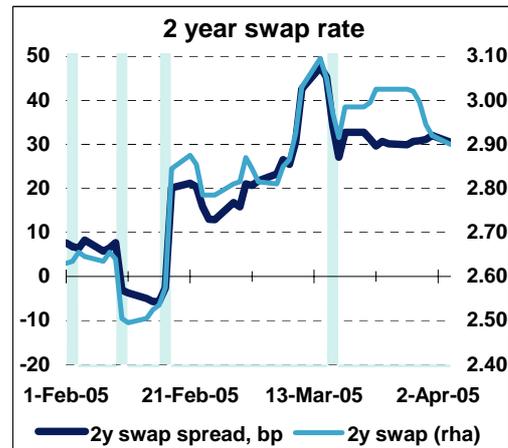
Markets reacted, however, when Statistics Norway on 10 February reported that core inflation fell from 1.0% in December 2004 to 0.7% in January 2005, 0.6%-point below the estimate given in IR 3/04, cf. Chart 6.3. Rate expectations fell, with the 2y spread declining 11 bp, and somewhat more the following days, cf. Chart 6.4.

Chart 6.3



Source: Norges Bank/Statistics Norway/DnB NOR Markets

Chart 6.4



Source: Datastream/DnB NOR Markets

The market's reaction may be understood in light of the designated strategy in IR 3/04, where continued low inflation was singled out as one of the risk factors. An alternative scenario, with inflation staying ½ %-point below the IR-path would, according to Norges Bank, necessitate an interest rate in the lower end of the 1¼-2¼% strategy interval, alternatively maintaining the interest rate unchanged for a longer period of time than in the current forward path. Given Norges Bank's signal on 2 February that further rate cuts were less likely, a flattening of the curve, by pulling down future rate expectations, seemed warranted.

But markets overreacted. In Governor Svein Gjedrem's **Annual address February 17<sup>th</sup>**, the very low January inflation was more or less dismissed. Gjedrem said that *"Two years after we started to lower interest rates it would appear that inflation is moving up, albeit slowly. Inflation is low, but the indices are also influenced by temporary and erratic disturbances."* More important, a number of key sentences applied in previous post-meeting press statements were modified. Gjedrem stated that *"It has been important to prevent inflation expectations from falling and becoming entrenched at a low level"*, that *"we have kept interest rates low for a longer period"* and that *"Norway has lagged behind other countries in adjusting interest rates to a more normal level."* After the Board meeting two weeks earlier, it was stated that *"...we should lag behind other countries in setting interest rates at a more normal level."* Furthermore, the Governor

stated that the folio rate was at its lowest level since 1816, that the real rate was below its assumed neutral level, and that this would continue to stimulate demand going forward.

Markets responded immediately. The following day the one- and two-year interest rate differentials rose 15 bp and 23 bp, respectively. This was the single largest market movements last year. In light of the experiences with the December 2002 and June 2003 speeches – where new rhetoric was followed by immediate monetary action, markets were concerned that Norges Bank would not wait long before acting. Over the course of the next month, the one- and two-year differentials rose another 29 bp and 13 bp, partly fuelled by data from Statistics Norway showing good growth in the second half of 2004.

But Norges Bank did not act according to market expectations. The press statement following the **March 16<sup>th</sup> meeting** flagged no alternatives and said nothing about lagging behind other nations in normalizing interest rates. The interest rate interval at the end of the four-month strategy period was lifted from 1¼%-2¼% to 1½%-2½%, but it was explicitly stated that one should not interpret this as a higher central value. Rather, it reflected that the previous low end now was seen as less likely, and that one wanted to maintain the width of the band as before. Further, it was stated that "*...the interest rate can after a period, and then gradually, be brought to a more normal level.*" Both the one- and two-year interest rate differentials fell on the news, by 7 bp and 11 bp, respectively.

After the **April 20<sup>th</sup>** meeting Norges Bank confirmed the IR 1/05 strategy and indicated that a rate hike lay in the cards: "*...it is too early to increase the interest rate at this monetary policy meeting.*" The 1- and 2-year swap spreads rose by 4 and 9 bp, respectively.

By **May 25<sup>th</sup>**, Norges Bank introduced the formulation that the interest rate should be hiked in "*small, not too frequent steps*" – generally interpreted by analysts as meaning 25bp per four-month strategy period. The first rate hike was moving closer: "*As an alternative, the Executive Board considered increasing the interest rate already at this meeting.*" By stating that the Board considered hiking, one signalled that rates most likely would be increased at the next meeting. By acting in line with market expectations, the market reaction was negligible. Spreads barely moved at all.

The 25bp hike on **June 30<sup>th</sup>**, the first hike in three years did not move the market either, being largely seen as announced at the previous meeting. Also, the strategy of small, not too frequent steps was maintained.

With economic developments largely as expected over the Summer, no new signals were expected in advance of the **August 11<sup>th</sup>** meeting. Again, market actors were proven broadly correct, as Norges Bank stuck to the strategy of "small, not too frequent steps", and spreads barely moved at all.

Economic developments over the next seven weeks were again broadly in line with expectations, but the gradual strategy implied that the next hike was approaching. On **September 21<sup>st</sup>** Norges Bank said that "*One option was to increase the interest rate at*

*this meeting, but we found it appropriate to leave the interest rate unchanged.*" Market actors interpreted this as the necessary confirmation that rates would be hiked by 25bp at the next meeting, and the two spreads rose 7-9 bp on the day before.

This expectation was met when the Board hiked by 25bp on **November 2<sup>nd</sup>** and maintained the gradual strategy, consequently not affecting the market.

During November and early December, economic data were indicating that the Norwegian recovery was gaining momentum. In particular, Statistics Norway's quarterly survey indicated higher offshore investments in 2006 than previously expected and the decline in unemployment seemed to accelerate. Also, the trade- and import-weighted NOK exchange rate weakened somewhat. Further, the ECB hiked by 25bp December 5<sup>th</sup>. Therefore, several analysts and traders believed that Norges Bank at the meeting on **December 14<sup>th</sup>** might consider it appropriate to indicate a slightly faster pace of rate hikes, e.g. by stating that a rate hike had been considered. With rate expectations gradually rising at the same time as the NOK weakened, the *timing* of such a move seemed well-founded. But these developments failed to move the central bank. Despite acknowledging expectations of higher interest rates among Norway's trading partners as well as a weaker NOK, the bank stuck to its strategy. 1y and 2y spreads fell 4-5 bp on the day, and another 3-5 bp the following day.

Statistics Norway released CPI data for December on January 10<sup>th</sup>. Core inflation fell from 1.1% y/y in November to 0.9% y/y in December, the lowest since April, and 0.4%-points below Norges Bank's prediction in IR 3/05 from November. Fearing that inflation again would fail to pick up as expected by Norges Bank, and that this would lead to rates being kept low for a longer period of time, rates expectations declined markedly, with the 1y and 2y spreads declining 12-14 bp.

On **January 25<sup>th</sup>** Norges Bank maintained the interest rate, as expected. More surprising – at least to some analysts, apparently less so to the market – the press release said nothing about a hike having been considered. Rather, Norges Bank chose to focus on the increased uncertainty surrounding the outlook in light of continued strong real economy data but surprisingly low inflation: "*New information...provides mixed signals...The risk factors on each side seem to be somewhat more marked now, but do not as a whole provide grounds for changing the assessment of the outlook.*" Having adjusted in advance, after the December CPI data, the cautious statement, which was seen as opening the door for no hike in March if inflation should continue to decline, caused no market reaction.

Table 6.2 and Charts 6.1-6.2 clearly shows that market reactions to the nine rate meetings in 2005 and the one so far in 2006 has been muted, compared to the movements seen in previous years. This can be taken as *prima facie* evidence that Norges Bank has become a better communicator, or, seen from the other side, that market actors have bettered their understanding of Norges Bank's communication. This leads us to conclude that the communication with the market over the last year has been transparent, consistent and – overall – good.

We will nevertheless point out two incidents which illustrate that the communication could have been improved somewhat. The first of these relates to the market movements after the CPI data for January 2005, including both the Annual address and the March 16<sup>th</sup> Board meeting. It seems that Norges Bank had more resilience to the low inflation data than the market believed it to have. The market seems to be very concerned if CPI – ATE deviates from the path given in the latest Inflation Report, while Norges Bank seemed largely unmoved. It is our impression that Norges Bank now takes a broader perspective on inflation than it did previously, giving less weight to the key measure, CPI – ATE, and more weight to other measures. One indication of this change is that CPI – ATE is, as of IR 3/04, no longer explicitly mentioned as the key measure at page 2 in the Inflation Report. However, to our knowledge Norges Bank has never communicated a change in its priorities. This makes it more difficult for market participants to understand and forecast the Bank's decisions.

The second incident is the meeting on January 25<sup>th</sup> this year. After this meeting Norges Bank did not include a similar text that had preceded the hikes in June and November, namely that the Board, as an alternative, had considered hiking already at this meeting. While we obviously do not know the outcome of the next meeting, the fact that the overall assessment is maintained, makes it highly likely that the rate will be hiked by 25bp. Therefore, it would not be inappropriate to maintain the apparent practice that was established last year, to signal a rate hike in advance by stating that an alternative had been discussed. In our meeting with the central bank a very good explanation was given for the omission, namely that the external communication should reflect the internal communication. Stating that a rate hike was discussed when this was not the case, would violate this principle. While we strongly support the principle that the external communication should reflect the internal, one must also be aware of the possibility that the market, sometimes for good reasons, interprets the communication differently from the way that it was meant. If the market interprets information that the Board discussed an alternative as a signal or bias for future interest rate decisions, while this is not intended from the Bank, then the Bank should make clear that the alternative does not constitute a signal.

Likewise, over several years a practice has developed where some formulations put on more weight than others. Currently, the "small, not too frequent steps" is such a formulation. If this formulation were to be changed to, e.g., "small, gradual steps" by "mere accident", unnecessary confusion would arise. One should add, though, that as the Bank has started to publish its own optimal interest rate path, its communication may be linked up to this path, so the Bank may indicate whether it still adheres to the path, or that recent developments pull in the one or the other direction.

One of the economists we interviewed for this report expressed a desire for "plain Norwegian" in the bank's statements. We sympathise with his view. And after having established the optimal interest rate path, it would have been easy to say something along the lines of "The way we see things today, we will hike by 25bp either in January or March, and by another 75bp by March 2007." rather than the "small and not too frequent" which, frankly, is more oriented towards the insiders of the liturgy than the broad public

that the Bank also addresses. While some seems inclined to believe that the large uncertainty inherent in the predictions is best communicated by being opaque, our view is the opposite: That uncertainty is best communicated by being explicit about it. Further, the more one wants to affect public expectations of future interest rates, the clearer it is advisable to be.

Another example: In our meeting with Norges Bank, it was pointed out that the fresh Annual address contained a number of new signals on monetary policy, something which must have gone unnoticed by the bulk of outside analysts and commentators, as none – to our knowledge – has referred to any changes. If so, one may ask whether the Bank has been clear enough about this in its communication. In this particular case, a sentence indicating that the speech contained some new judgments about the current monetary stance would have been helpful.

**NBW's view:**

**Norges Bank's communication with the market over the last year has been transparent, consistent and – overall – good. Market reactions to interest rate meetings have in general been slightly smaller than in previous years.**

### **6.3 Optimal interest rate path**

A central aspect of the communication process is what assumptions to base the forecasts for interest rates and the exchange rate on. The three previous NBWs - NBW-03, NBW-04 and NBW-05 – all addressed this issue, and all advised that Norges Bank should release an explicit policy inclination in the form of a projected “optimal” path for interest rates.

Norges Bank's practice over the last six years has varied considerably. Forecasts for two central variables, the folio rate and the exchange rate have been based on a large number of varying assumptions. Some forecasts have been based upon unchanged interest and exchange rates, others on market forward rates or augmented forward rates. (Table 5.3 in NBW-05 provides a full picture for the years 1999-2004.) This varying practice has been confusing and made monetary policy less transparent. Such lack of transparency could possibly create more market volatility.

The first step towards an optimal interest rate path was taken in IR 1/05, when the interest rate assumption applied deviated from the market forward rates after Q4 2006, cf. Chart 6.6. The reason given for the deviation was that Norges Bank saw long-term rates being temporarily depressed due to special, primarily international, factors, and that they therefore did not provide an accurate picture of expectations concerning Norges Bank's interest rate setting in the longer term. This practice was maintained in IR 2/05, again lifting the end-period interest rate a good ½ percentage point relative to the corresponding forward rate. Thus, both Inflation Reports clearly communicated to the market that their expectations to future short-term rates were too low, given Norges Bank's current

outlook, the bank's interpretation of its mandate and its view on how the economy functions.

The full, and most likely final, step was taken in IR 3/05, when Norges Bank for the first time published its own best guess on future short-term rates over the forecasting horizon, cf. Chart 6.6. Given previous NBW-recommendations, there is no surprise that we welcome such a move – without taking any credit for the decision. Norges Bank has also received international praise for this, Svensson (2006a,b).

There are several benefits of publishing an optimal interest rate path:

- It shows in a simple yet clear way the interest rate path that the Bank sees as providing the best balance between the various objectives of monetary policy. Although Norges Bank itself avoids the term “optimal”, we believe this term to accurately describe the nature of the path. While there might be many possible interest rate paths that give a good combination of expected inflation and output – not the least considering the great uncertainty involved - no other could be better, as in this case the other one should have been chosen.
- By communicating an interest rate path, and sticking to this, unless new information should require a different rate setting, monetary policy becomes more transparent and thus more efficient. Since the central bank only control interest rates at the very short end of the curve (basically the overnight rate), and since private sector decisions are based upon expectations of future interest rates, monetary policy can achieve more if it may affect market expectations. For example: Throughout 2004 Norges Bank stated that one would “...lag behind other countries in setting interest rates at a more normal level”, thus containing expectations of a reduction in the interest rate differential and therefore possibly hinder an appreciation of the NOK. While such communication is helpful, it is obviously better to be precise about future interest rate setting, reducing the possibility of incorrect expectations.
- An optimal path may be cross-checked with market forward rates. If they differ, it should, ideally, be possible to explain why.
- All other predictions, based on this interest rate assumption, become unbiased, and not, as was often the case previously, biased to the upside or downside. They may thus be easier evaluated against and compared with other institutions' estimates which in general are unbiased.

An obvious argument against an optimal interest rate path is that it may work as a straightjacket for the Bank, since future deviations from the path may be met with criticism that the Bank has misled the market and the public at large. Also, by failing to “deliver” according to its predictions, the Bank may lose credibility.

While neither of the two can be fully ruled out, good communication should help avoid this. First, by being explicit about the large inherent uncertainty in macroeconomic forecasts, in particular some years ahead, one may increase public awareness on the conditionality of the forecasts. Second, one may argue that an explicit interest rate path and the adjoining commitment also invokes more central bank discipline, since a

deviation would have to be explained, by new information (“shocks”) or a new understanding of how the economy functions, or both.

**NBW’s view: We applaud the decision by the Bank to publish its own interest rate forecast, with effect from IR 3/05 on. This has a number of benefits, such as giving the best possible illustration of the optimal interest rate path, enhancing monetary policy efficiency by being more transparent, facilitate a cross-check with market forward rates, and leading to unbiased forecasts for other variables. Norges Bank has also received international praise for this step. While there are some possible arguments against publishing an optimal interest rate path, these are in our opinion of minor importance.**

## 7 Sammendrag av Norges Bank Watch 2006

Samlet sett fungerer pengepolitikken i Norge godt. Rentesettingen de siste 2-3 årene har bidratt til en sterk utvikling i norsk økonomi, uten fare for målet om stabile priser. Nå er spørsmålet om når, og hvor mye, pengepolitikken bør strammes inn, for å unngå en overdreven stimulans av økonomien.

Det er nå fem år siden Norge fikk et inflasjonsmål. I denne tiden har Norge Bank vært bevisst på å lære og forbedre seg, samt på å være åpen og transparent. Bankens politikk, analyser og kommunikasjon har utviklet og forbedret seg over tid. Fortsatt er det imidlertid noen områder der en kan mene at ting skulle vært gjort annerledes, og slike områder vil få spesiell oppmerksomhet i vår rapport. Hovedbildet om at Norges Bank gjør en god jobb står imidlertid fast.

Mandatet til Norges Bank Watch 2006 er

*The objective of the Norges Bank Watch report of 2006 is to evaluate Norges Bank's conduct of monetary policy, given the mandate for the monetary policy set by the Government in March 2001. The committee should evaluate if the objectives stated in the monetary policy mandate concur with those expressed by Norges Bank and whether Norges Bank uses its policy instruments efficiently in order to achieve the relevant objectives.*

*The committee should also address other issues that it may find relevant for the present conduct of monetary policy.*

*Finally, the committee should evaluate the communication strategy of Norges Bank.*

*The report shall be presented at a press conference no later than 1 June 2006.*

### Målsettingene for pengepolitikken

Norges Bank har et fleksibelt inflasjonsmål, der det legges vekt både på lav og stabil inflasjon, og stabil produksjon og sysselsetting. Dette er i samsvar med forskriften for pengepolitikken gitt av Regjeringen. Den lave inflasjonen de siste årene, betydelig under det operative målet på 2,5 prosent, er forårsaket av faktorer som Banken ikke forutså, og kan ikke tas som tegn på at pengepolitikken avviker fra Regjeringens forskrift.

I Inflasjonsrapporten, som er det sentrale politikkdokumentet, redegjør Norges Bank for sin tolkning av målene for pengepolitikken. Bankens tolkning dekker ikke innholdet i Regjeringens forskrift fullt ut, og det er særlig punktet om valutakursstabilitet som er utelatt. Selv om lav inflasjon som operativt mål vanligvis vil bli prioritert ved eventuelle målkonflikter i forhold til hensynet til stabilitet i valutakursen, så er stabil valutakurs også

en målsetting for pengepolitikken. Politikkdokumenter som Inflasjonsrapporten bør gjengi målsettingene for pengepolitikken i sin helhet.

Forskriften for pengepolitikken skal tolkes som framoverskuende, og avvik fra målet skal ikke kompenseres for i ettertid. Den nåværende pengepolitiske strategien, der det siktes mot at inflasjonen gradvis skal ta seg opp mot 2,5 prosentmålet, er ikke i motsetning til forskriften, selv om den innebærer at inflasjonen vil være betydelig lavere enn det operasjonelle målet i seks sammenhengende år.

Forskriften for pengepolitikken innebærer at Norges Bank skal sikte mot lav og stabil inflasjon og en stabil utvikling i produksjon og sysselsetting. Den lave inflasjonen nå står ikke i motsetning til disse målsettingene. Det operasjonelle målet på 2,5 prosent inflasjon kan ikke rettferdiggjøre en politikk som innebærer betydelig risiko for realøkonomisk ustabilitet, og vi tror ikke Norges Bank ville føre en slik politikk. Hvis Norges Bank skulle få den oppfatning at lav inflasjon er så vedvarende at pengepolitikken ikke kan klare å få inflasjonen opp mot 2,5 prosent, og samtidig bidra til en stabil utvikling i økonomien, så burde Banken be om en ny forskrift for pengepolitikken. Vi tror at Banken ville gjøre dette i en slik situasjon. Men vi er langt fra en slik situasjon nå.

## **Utfordringene**

Nyere litteratur om pengepolitikk gir ikke noen entydig anbefaling om i hvilken grad pengepolitikken skal ta hensyn til finansiell stabilitet. Likevel er det bred enighet om at utviklingen i verdipapirmarkeder og boligmarkedet er viktige indikatorer for den fremtidige økonomisk utviklingen, og derfor ikke kan neglisjeres i beslutningsprosessen. Hvis svingninger i prisene på verdipapirer og boliger blir forsterket av rentesettingen, vil dette ha en kraftig virkning på husholdningene og bedriftenes konsum og investeringsbeslutninger. Det kan medvirke til betydelig ustabilitet i realøkonomien. Slike sammenhenger kan være langvarige, og de vil derfor kunne få for lite oppmerksomhet innen en tre års horisont.

Norske formuespriser øker nå kraftig. Selv om dette ennå ikke ser ut til å innebære noen betydelig risiko for økonomien, og særlig ikke for en systemkrise, så tror vi at dagens prisstigningstakt ikke kan vedvare. Prisstigningstakten vil etter hvert justeres, mer sannsynlig ved en utflating snarere enn et direkte fall. Dette vil dempe samlet etterspørsel, og kan føre til ustabilitet i realøkonomien. Isolert sett tilsier dette en høyere rente enn det vi har nå.

Fortsatt lav inflasjon, betydelig lavere enn målet på 2,5 prosent, tilsier at renten holdes lav. Hva bør Norges Bank gjøre?

Den lave inflasjonen medfører ingen vesentlige kostnader for samfunnet. Derimot innebærer den lave inflasjonen en mulighet til å redusere arbeidsledigheten til lavere nivåer enn det som ellers ville vært mulig. Den sterke pengepolitiske stimuleringen av økonomien innebærer en risiko for at oppgangen i økonomien blir for sterk. Den sterke

utviklingen i økonomien er enda et tegn på at den pengepolitiske stimulansen burde være svakere enn det Norges Bank planlegger.

Den vedvarende lave inflasjonen, betydelig under målet på 2,5 prosent, har fått noen observatører til å foreslå at målet bør senkes, for å unngå en ekspansiv pengepolitikk som innebærer en risiko om ustabilitet i realøkonomien. Vårt syn er at den nåværende forskriften gir tilstrekkelig fleksibilitet. En endring av det operasjonelle målet for pengepolitikken må ikke ses som en enkel løsning. En endring til et annen tallfestet inflasjonsmål ville gi et misvisende signal om hvordan en fleksibelt inflasjonsmål bør fungere.

### **Norge Banks pengepolitiske vurderinger og strategi**

Ved å publisere de pengepolitiske vurderinger og strategi i begynnelsen av strategiperioden har Banken bidratt til økt åpenhet og transparens. Det første kapittel i Inflasjonsrapporten virker som en egnet plassering. Innholdet i de pengepolitiske vurderinger og strategi bør presentere og diskutere de viktigste forhold som ligger bak Hovedstyrets beslutninger. I denne sammenheng savner vi en grundigere diskusjon av arbeidsmarkedet og lønnsfastsettelsen, av valutakursen, av inflasjonsforventningene, samt av ulike mål på inflasjonen. På den andre siden kan enkelte elementer, som sammenligningen med enkle regler og utviklingen i pengemengden gjerne utelates fra politikkvurderingene.

Viftene som viser usikkerheten ved Bankens prognoser synes å innebære en undervurdering av usikkerheten ved slike prognoser. Presentasjoner av usikkerhetsviftene bør inkludere et forbehold om at vurderingen av usikkerheten i seg selv er usikker. Hvis Banken tror at hendelser den siste tiden tilsier at inflasjonen er mer volatil enn den har vært tidligere, bør Banken legge ved et forbehold om dette når usikkerhetsviftene presenteres. De gode erfaringene med Professor Ragnar Nymoens inflasjonsprognosemodell, til tross for en enkel tilnærming som krever lite arbeidskraft, tilsier videre oppmerksomhet fra banken.

### **Pengepolitikken i 2002-2006**

Pengepolitikken virker med betydelige etterslep. Pengepolitiske beslutninger tatt i 2002-04 har derfor fortsatt innvirkning på utviklingen i 2005-06. Tilsvarende kan beslutningene tatt i 2005 først vurderes når en har sett hvordan økonomien utvikler seg i 2006 og 2007.

Resultatene for produksjonsgapet og inflasjonen i 2003 og 2004 tyder på at pengepolitikken – vurdert i ettertid – var for stram i de foregående 2-3 årene. Resultatene for 2005 er ikke like entydige. På den ene side tyder rimelige anslag på Norges Banks ”tapsfunksjon” at en mer ekspansiv politikk ville gitt bedre resultater, på den andre siden

er vi overbevist om at ytterligere rentekutt i 2004 ville ha økt den nåværende risikoen for en overoppheting av økonomien.

Gjennom 2005 holdt Norges Bank mer eller mindre fast ved den strategien som ble trukket opp allerede i IR 3/04 i november 2004. Slik vi ser det, avspeiler dette delvis at Norges Bank utarbeidet gode anslag og gjorde riktige pengepolitiske vurderinger. Men den bemerkelsesverdige konsistensen i strategiene og rentesettingen over de siste 16 månedene kan også forklares med at internasjonal økonomi har tålt økningen i oljeprisen de siste årene på en overraskende god måte. I tillegg har de forstyrrelser som har rammet norsk økonomi i stor grad at motsatte virkninger på rentesettingen. Mens økningen i oljeprisen har bidratt til økningen i innenlandsk etterspørsel, har fortsatte endringer i importmønsteret bidratt til å holde importert inflasjon nede. Stabiliteten i Norges Banks anslag gjennom det siste året for veksten hos Norges handelspartnere gjenfinnes i gjennomsnittsanslag fra uavhengige prognosemakere over samme tidsrom.

Norsk økonomi er nå inne i sitt tredje år med vekst over trend. De fleste områdene av økonomien vokser, noen relativt hurtig. Arbeidskraftetterspørselen tar seg opp, og ledigheten er nær historiske bunnivåer. Selv om lønns- og prisveksten så langt er lav, taler dagens situasjon for noe strammere pengepolitikk enn Norges Bank nå varsler. Høy vekst i kreditt og aktivpriser (se kapittel 3) forsterker dette synet. Etter vårt syn er det nå større risiko ved å heve for lite, for sent, enn for mye, for tidlig. I førstnevnte tilfelle vil lite og sen renteheving nå øke sannsynligheten for at en senere må heve i større skritt. Dette ville være i strid med hva Banken selv ser på som en god måte å sette renten.

## **Kommunikasjon**

Norges Bank kommuniserer godt. Banken har de siste årene tatt en rekke skritt for å bedre sin kommunikasjon med markedet og publikum, og fortsetter å gjøre dette. Dette avspeiler - slik vi ser det - en genuin vilje til å være åpen og transparent. Selv om dette kan ses i lys av Norges Banks rolle som et offentlig organ, som tar beslutninger som er viktige for husholdninger og bedrifter, er slik åpenhet også antatt å styrke pengepolitikkenes effektivitet.

Norges Banks kommunikasjon med markedet det siste året har vært transparent, konsistent og gjennomgående god. Markedsutslagene etter rentemøtene har vært noe mindre enn i tidligere år.

Vi bifaller Bankens beslutning om å publisere sin egen renteprognose, med virkning fra og med IR 3/05. Dette har en rekke fordeler, ved at det gir en best mulig illustrasjon av den optimale rentebanen, øker pengepolitikkenes effektivitet ved å være mer transparent, muliggjør en kryss-sjekk med markedets renteforventninger, og gir forventningsrette anslag for øvrige variabler. Norges Bank har også fått internasjonal anerkjennelse for dette skrittet. Selv om det også er enkelte argumenter mot publisering av en optimal rentebane, er det vår vurdering at disse er av mindre relevans.

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